



**Universitat de les
Illes Balears**

**Title: “Gamification and Motivation in the EFL Classroom:
A Survey-Based Study on the Use of *Classcraft*”**

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Master's Thesis

Master's Degree in Teaching Training (*MFPR*)
(Itinerary: English and German)

at the

UNIVERSITAT DE LES ILLES BALEARS

Academic year 2017-2018

Date: July the 16th, 2018

UIB Master's Thesis Supervisor: Yolanda Joy Calvo Benzies

Abstract

For many decades, the bases of education have remained unchanged. In an era where classrooms are being provided with personal computers, projectors, and interactive whiteboards, the ineffectiveness of traditional educational methodologies has been brought into the open. This has caused the reaction of many researchers, educators, and institutions, who have united forces to reinvent and innovate the educational scene at a wide scale. Part of the focus has been placed on gamification which, in a broad sense, consists on applying game mechanics to real life contexts to achieve higher levels of engagement and motivation from users while simultaneously having them acquire new abilities. Despite having been supported by psychological theories, the limited number of practical studies carried out so far showcases inconclusive results. Thus, this MA dissertation adds to the corpus of practical studies on gamification in the hope that someday it will prove useful in the search of a definite answer in this matter. In this study, two groups of English as a Foreign Language (EFL) students at different academic levels (3rd year of Compulsory Secondary Education and 1st year of Non-Compulsory Secondary Education) in a Spanish high school were taught a didactic unit each in an environment characterised by a high presence of gamification elements and techniques, with *Classcraft* being at the forefront. So as to gather students' impressions and their previous experiences within the educational system, two different questionnaires (one prior to the experiment and another one afterwards) were delivered to them. Apart from this, they were encouraged to briefly fulfil a weekly portfolio to gather information on what they found most motivating, engaging or boring in each of the classes in which gamification was applied.

Keywords: EFL, ICT, gamification, motivation, *Classcraft*

Table of Contents

| | |
|---|----|
| 1. Introduction | 1 |
| 1.1. Justification | 2 |
| 1.2. Purpose | 4 |
| 1.3. Structure | 5 |
| 2. Literature Review | 5 |
| 2.1. Games | 5 |
| 2.2. Gamification | 8 |
| 2.2.1. Origins | 8 |
| 2.2.2. Definition | 8 |
| 2.3. Serious Games or Gamification? | 10 |
| 2.4. Elements of Gamified Systems | 10 |
| 2.4.1. Points | 11 |
| 2.4.2. Levels | 13 |
| 2.4.3. Achievements and Badges | 15 |
| 2.4.4. Leaderboards | 17 |
| 2.5. Gamification and Motivation | 19 |
| 2.6. General Recommendations | 23 |
| 3. Method | 26 |
| 4. Results | 29 |
| 4.1. Students' Self-Assessed Linguistic Competence | 29 |
| 4.2. Interest | 30 |
| 4.2.1. Students' Personal Interest and Predisposition | 30 |
| 4.2.2. The Effect of Materials on Students' Interest | 31 |
| 4.3. Methodology | 32 |

| | |
|---|----|
| 4.3.1. Regular Teachers' Methodology..... | 32 |
| 4.3.1.1. Adequacy, appeal, and fun | 33 |
| 4.3.1.2. Materials | 34 |
| 4.3.1.3. Group dynamics..... | 36 |
| 4.3.2. Gamification..... | 37 |
| 4.3.2.1. Adequacy, appeal, and fun | 37 |
| 4.3.2.2. Materials | 39 |
| 4.3.2.3. Group dynamics..... | 42 |
| 4.3.2.4. <i>Classcraft</i> | 45 |
| 4.4. Students' Satisfaction with the Subject..... | 46 |
| 5. Further Proposals..... | 48 |
| 5.1. Limitations and Suggestions | 48 |
| 5.1.1. Duration | 48 |
| 5.1.2. Sample's Size | 48 |
| 5.1.3. Context of the Experiment | 49 |
| 5.2. Applying Complete Games to Education: <i>Drawful 2</i> | 49 |
| 6. Conclusion | 51 |
| Works Cited..... | 54 |
| Appendices..... | 62 |

1. Introduction

In a society that is changing faster than ever due to the miracles of the Internet, traditional education has proven to be ineffective among the current generations of students. In today's world, multiple choices are constantly available to us, and the youngest generations are no exception. Published in 2005, in his article "Engage Me or Enrage Me': What Today's Learners Demand," Marc Prensky delves into this issue, concluding that the most widespread formula used in education is "[y]esterday's education for tomorrow's kids" (62). Nearly a decade and a half has now gone by, and the educational scene still remains intact in most parts of the world. With no efforts put into a renovation that has been asked for by several generations of students hitherto, it is not strange that many learners feel neither motivated nor engaged towards their classes or the contents that they are being taught. It is about time that educators, researchers, and institutions unite their forces to renovate the educational scene, innovating and promoting those methodologies and techniques that have been successful in reaching and fulfilling the needs of current generations of students. In this sense, one possible solution is to look at those products and activities towards which an increasing number of students and other sectors of the population seem to be naturally attracted to as well as engaged, with video games being a great example.

The video game industry has experienced a constant expansion in the last few years (González and Calvo-Ferrer 2017, 39), trend which will apparently remain unchanged up to 2021 according to economic forecasts (Wijman 2017). In numbers, the video game industry had in 2016 \$104.8 billion in revenues, whereas in 2017 its revenues amounted up to \$116.0 billion (Wijman 2017). The most recent forecasts for this year announce revenues of \$137.9 billion globally (Wijman 2018). As for Spain, with revenues of \$2,303 million in 2018, the most recent data not only places it among the five European countries that spend the most on video games, together with Germany, the United Kingdom, France and Italy, but also among the top ten worldwide (Newzoo 2018). Given the success of the video game industry all over the world, many researchers have looked at different ways to benefit from the potential that video games have to engage and motivate its users, who tend to play them over and over. Indeed, in the last

century, no psychologist has opposed to the positive educational effects of “fun, play, and games” (Heinzen et al. 2015a, 134-135). Gee (2013) underlines the educational value of video games, noting that they “have the potential to lead to active and critical learning” not only for players themselves, but also for “the people around the learner, other players and nonplayers” (46). This will be very familiar to many people. In those situations where one becomes an observer of someone else’s gameplay, rather than remaining passive to the situation, they will frequently engage in the video game as well, usually by means of thinking about different alternatives and solutions, and making suggestions to the actual player to solve the problem presented by the video game. In fact, a platform like Amazon’s Twitch has been in high demand since its creation. Its economy is based on the player/observer dynamic or, in other words, on people who engage in watching the gameplays that other people live stream. The number of people who engage in watching *game video content* (GVC) across several platforms is so large that, as for 2017, “[m]ore people [were] watch[ing] GVC than HBO, Netflix, ESPN and Hulu combined,” with Twitch having an audience of 185 million viewers (SuperData 2017).

1.1. Justification

Considering that as happens with videogames “[a]s educators, this is what we strive for: capturing the attention and interest of our students, and having them engage in a manner that sustains their interest and keeps them coming back for more” (Buckley and Doyle 2015, 2), it is not strange that an important part of the focus dedicated to educational innovation has been put on gamification. Gamification refers, in a general sense, to the introduction and application of elements which are typical of video games in real life environments (Deterding et al. 2011, 2), such as classrooms or workplaces. Given the fact that, according to Topîrceanu (2017), “80% of students admit they would be more productive if [the] institution where they work or learn would be more game-like” (42), it seems almost mandatory for teachers to explore the potential benefits that gamified environments can bring to their classes. According to theoretical studies, as Gressick and Langston (2017) note, “[t]here are many psychological underpinnings that support gamification as a widely-applicable, effective

approach to classroom pedagogy” (110). Buckley and Doyle (2014) additionally refer to gamification as “a powerful tool for educators teaching at all levels within the education system” (11), highlighting its potential to positively affect “engagement, participation and learning behaviours” (2). Topîrceanu (2017) brought gamification into practice when he implemented a gamified system in several courses extending over a period of 3 years (academic years 2014-2017), with his findings demonstrating the resulting motivational boost (improved attendance, grades, and homework completion) in those groups that were taught in a gamified environment, as opposed to the control groups (48-49). Results like these pose a hope for many educators who, over time, have had more and more difficulties to connect with their students and get through to them.

Given these promising results, this is of much importance and use in the educational context of Spain, a country which, as for 2015, held the second highest rate of early leavers from education and training¹ among all EU28 members, with a number as high as 20% (European Commission 2016, 2). Further analysing the Spanish case, it is the Balearic Islands that hold the second highest value, with a percentage of 26.7%, 15.7% more than the EU28 mean value (Ministerio de Educación, Cultura y Deporte 2016, 24). These figures are even more striking if we consider the most recent results for school failure² in Spain (academic year 2014-2015), with the national mean being 19.3%, which rises to 21.4% in the case of the Balearic Islands (Ministerio de Educación, Cultura y Deporte 2017, 181). This is the result of the interaction of a complex network of variables that originate in several contexts, an issue that is not under the scope of this dissertation. However, considering that one of such variables is the methodology used by teachers in schools (Salvà-Mut, Oliver-Trobat, and

¹ This group includes those students aged 18-24 who had completed their lower secondary education studies and who were not enrolled in any further education or training. In the case of Spain, this translates into students who, at most, have accomplished Compulsory Secondary Education (*ESO*), and who have not enrolled in Training Courses (*Formación Profesional*) or Non-Compulsory Secondary Education (*Bachillerato*).

² This group includes those students aged 16+ who have dropped out of school in a specific academic year without having attained lower secondary education, that is, *ESO* in the case of Spain.

Comas-Forgas 2014, 133), together with the positive impact that gamification seemingly has on students' engagement and motivation, gamifying our classes poses a solution to some of the issues that are rooted in our educational institutions, enabling us to bring a breath of fresh air into a system that craves for constant innovation and creativity.

1.2. Purpose

Before establishing the aim of this dissertation, apart from considering all the information developed in the previous pages, it is important to take into account that the “success [of a gamified platform] in one non-game context does not guarantee that the same mechanism will be successful in another non-game context” (Richter, Raban, and Rafaeli 2015, 37). Thus, the objective of this dissertation has been partially influenced by this affirmation. More specifically, the current study aims at exploring the effects of applying gamification strategies on the motivation of two groups of English as a Foreign Language (EFL) students, one in the 3rd year of Compulsory Secondary Education (*ESO*), and one in the 1st year of Non-Compulsory Secondary Education (*Bachillerato*). Nevertheless, its secondary aim is to verify whether and to what extent the implementation of similar gamification techniques in the classes taken by the two groups of students can affect them differently. In order to comply with Deterding et al.'s (2011) definition of gamification, as well as out of inspiration from the model presented by Topîrceanu (2017), which is based on *Role Playing Games* (RPG) (44-46), I decided to, on the one hand, use *Classcraft*³ as the base for this project and, on the other hand, along with this program, to build my classes around a student-centred approach, with games and group-dynamics being at their core. Therefore, this dissertation ultimately aims at answering the following research questions:

³ *Classcraft* (<https://www.classcraft.com>) is an online platform where, on the one hand, teachers play the role of the Game Master (GM), meaning they create the rules and modify them whenever they see it fit, and students, on the other hand, can create their own characters choosing among three classes: warrior, healer, and mage, which correspond to the typical roles of tank, support, and damage dealer respectively in RPG video games. To progress, students undertake quests, beat bosses, use their characters' abilities, etc., with all this relating to course contents.

1. Are students' motivation and engagement levels affected positively when utilising *Classcraft* and a student-centred approach in the classroom?
2. Does the use of *Classcraft*, together with a student-centred approach, impact younger and more mature students in substantially different ways?

1.3. Structure

This dissertation will be structured as follows: to begin with, following the introduction, the current status of games and gamification will be discussed in the literature review section. Regarding the latter term, its origin and the most widespread definitions will be explored, followed by a discussion on the difference between serious games and gamification. The main elements of gamification will be presented as well, followed by an overview on the relationship that exists between gamification and motivation, and, finally, some general recommendations to design gamified systems will be provided. After this, in the method section, the data collection instruments will be presented and discussed together with the context in which they were applied. Afterwards, the results extracted from the answers to the questionnaires and from the students' portfolios will be presented. Finally, before concluding, some suggestions for further research as well as a sample gamified activity will be provided.

2. Literature Review

2.1. Games

Relatively new to the educational scene, the term *gamification* and everything that comes with it has drawn a lot of attention among academics and researchers in the last few years due to its potential to motivate and engage the users involved in gamified environments. With all the definitions of gamification being clearly oriented towards the *game* element of it, it seems mandatory to introduce a brief view of games in the first place.

From traditional table board games to sophisticated video games to the everlasting playground ones, games are considered as a natural product of the human experience, with the oldest one ever recorded tracing back to 5000 B.C. (Kumar, Herger, and Dam 2016). In their book *Rules of Play: Game Design Fundamentals* (2004), Salen and Zimmerman define a game as “a system in

which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome” (chap. 7). Mayer and Johnson (2010) define a game as “a rule-based environment that is responsive to the player’s actions, offer appropriate challenges to the player, and keeps a cumulative record of the player’s actions” (244). To complement these definitions, it is necessary to consider that, as Richter, Raban, and Rafaeli (2015) point out, games cannot be conceived without them being entertaining (22) or, in other words, without a certain level of “playfulness” (23) in them. Thus, games can be said to be based on a mixture of several elements, namely the existence of rules, an adapting environment, an appropriate level of difficulty, a series of scores, and fun in varying degrees.

Any game whose main aim is other than sheer entertainment will fall into the category of *serious* games. The rest will fall into the plain category of games or, attending to Muntean (2011), of “complete games” (324). The definitions for *serious game* abound among academics and, although differing in detail, they all share the same underlying ideas. Deterding et al. (2011) define serious games as “the use of complete games for non-entertainment purposes” (2). Similarly, Muntean (2011) understands serious games as “complete games with serious intentions” (324). Kapp (2012) goes beyond and specifies that “[a] serious game is an experience designed using game mechanics and game thinking to educate individuals in a specific content domain” (15). Referring to serious games applied to education, Goehle (2013) adds that “[a]n educational game is primarily a game but has the secondary effect of teaching the user something” (235). Finally, while delving into the work of several authors, and referring to the origins of serious games, Richter, Raban, and Rafaeli (2015) conclude that serious games emerge from the fact that games’ “universal applicability gave games extra functions in various aspects of everyday life such as training and knowledge sharing” (22), pointing out that their “main purpose is to train, investigate, or advertise” (22). Thus, they all agree with the idea that complete games differ from serious games mainly in their goals, with the former’s being to entertain its players and the latter’s to instruct them in certain aspects that have practical applications in the real world.

Nevertheless, it is necessary to mention that, despite being useful, the differentiation between complete and serious games is not always clear-cut. When properly applied in the classroom, many commercial video games whose original aim was to entertain its players have been proven practical for educational purposes. Video games such as *SimCity*, *Civilization* or *Railroad Tycoon* can help understand the basics of economics applied to societies and enterprises, whereas video games like *World of Warcraft*, *Second Life*, *Minecraft* or *Portal 2* can be useful to promote, among others, cooperation, communication skills and language learning (Buckley and Doyle 2014, 2; Centre for Teaching Excellence 2016; Isaacs 2015). On the other hand, even if their main purpose is to entertain the audiences that they are aimed at, not all commercial video games need to be used inside a classroom for them to have an educational value. Many of them subconsciously instruct their audiences in various skills. *TIS-100*, *Hacknet*, or *Human Resource Machine* teach programming and mathematics while promoting logical thinking. Others like *Spore*, *Cities: Skylines* or the *Tropico* and the *Democracy* series promote problem solving, decision making and resource management skills while raising awareness on innumerable issues and dilemmas that societies must face, such as overpopulation, wealth distribution, or climate change. Other video games like the *Fable* series, *Detroit: Become Human* or *Frostpunk* might teach moral values by having its players take tough decisions which affect and are reflected on the narrative's development. Many massively multiplayer online games (*MMOG*) require its players to work together and communicate either through voice or written chats, promoting cooperation, language skills, and foreign language learning in those cases where the server's official language(s) is other than the player's native language(s). This is to mention some of them since this list could go on without end and need continuous revisions and updates due to the fast-paced and ever-changing nature of the game industry.

My personal experience has shown me that commercial games can complement the contents taught at educational institutions in a motivating and engaging manner and, at the same time, some games catalogued as serious can be used for purposes other than training. *Quiplash 2* and *Drawful 2*, for instance,

can be easily adapted for the teaching of English as a second or foreign language (*ESL/EFL*), whereas *Kahoot!*, a game that is referred to as serious, can be used outside the classroom for entertainment purposes alone. With games gaining more and more presence in many aspects of our daily lives, it is not strange that in the last few years they have drawn the attention of a growing number of researchers and institutions from several fields due to their apparent potential to instruct and promote certain behaviours on its players. In this sense, a great part of the focus has been put on *gamification*, which will be reviewed in the following section.

2.2. Gamification

2.2.1. Origins

Chronologically, the origin of the term gamification remains partially unclear. Some authors note that it was first used between the years 2002 and 2003 by Nick Pelling, a computer scientist (Dale 2014, 84; Leaning 2015, 158) based on a post from Pelling's (2011) website where he claims having "coined the deliberately ugly word '*gamification*'". On the other hand, Deterding et al. (2011) note that its use was first attested in 2008, becoming popular only after 2010 (1).

2.2.2. Definition

Etymologically, *gamification* is formed by the word *game* and the suffix *-fication*, which derives from the Latin verb *facere* 'make, produce.' Based on this, it could be argued that *gamification* directly relates to the process of making a game. Although not exact, this definition shares to some extent the essence of what researchers consider that gamification comprises. Even if, as Zichermann and Cunningham (2011) point out, it "can mean different things to different people" (xiv), most authors agree on certain aspects that characterise it. The aforementioned authors define it as "[t]he process of [utilising] *game-thinking and game mechanics to engage users and solve problems*" (xiv). Deterding et al. (2011) define it as "*the use of game design elements in non-game contexts*" (2). After reviewing some definitions from different sources, Kapp (2012) states that "[g]amification is using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems" (10).

Chou (2013) puts the emphasis on playfulness, defining it as “the craft of deriving all the fun and addicting elements found in games and applying them to real-world or productive activities.” Leaning (2015) refers to gamification as “an approach to enhancing people’s experience of a service or system through incorporating game-like experiences into the service or practice” (158). After reviewing some authors, Lister (2015) concludes that “[g]amification involves selecting elements of games, and using these to create a game-like environment in a non-game context to increase user experience and engagement” (3). Similarly, Richter, Raban, and Rafaeli (2015) say that it “is the use of game elements in non-game systems to improve user experience and user engagement, loyalty and fun” (21). Therefore, whether it is considered a process or an approach, from these definitions it can be inferred that through gamification several elements of games are isolated and applied to real environments with the aim of promoting certain processes and attitudes which, ideally, would be elongated through time.

Although most people will be unfamiliar with gamification, it is widely used among companies and institutions, therefore being strongly present in our lives. Among other areas, gamification has been used in “healthcare, business, [and] education” (Lister 2015, 3). There are innumerable examples of gamified applications, some of which are well-known to the public. One example is Volkswagen’s *The Fun Theory* initiative, whose most famous campaign is the interactive piano staircase installed in Odenplan’s subway station, in Stockholm, which resulted in a 66% increase in the number of people who decided to use the stairs over the escalator (Huang and Soman 2013, 6). Many mobile apps are also a good example. Kapp (2012) mentions *Zombies, Run!*, which aims at tracking physical activity and, at the same time, immerses the user into a role game where they should “go out into a zombie-infested post-apocalyptic environment and collect supplies to bring back to [their] house” (3). Considered as “what may be the most successful population level physical activity program that we have seen in modern history” (LeBlanc and Chaput 2017, 236), Niantic’s *Pokémon Go* uses gamification to engage its users into having physical and, optionally, social activity by offering them the chance to catch Pokémon or hatch eggs containing

them in exchange of walking (236); and it seems to be succeeding considering that not only has this app managed to attract users that other health apps have not, but also that it has increased its users physical activity, achieving at the same time high engagement rates (Althoff, White, and Horvitz 2016). Many language learning apps have benefited from gamification too, with *Duolingo* being one of the greatest examples. Founded by Luis von Ahn and Severin Hacker, *Duolingo* has nearly 200 million active users according to their website, and incorporates some elements which are typical of gamification, such as awards, leaderboards, experience points (*XP*), or progress bars (Munday 2016, 88).

2.3. Serious Games or Gamification?

Attending to the examples found above, together with all the information presented hitherto, it is feasible for one to notice that the boundaries that differentiate complete from serious games, and these latter from gamification, are rather volatile and vague depending on the user's perspective. Indeed, authors like Deterding et al. (2011) timidly note this when they affirm that both serious games and gamification use "games for *other* purposes than their *normal* expected use for entertainment" (3). Considering this, for simplification purposes this dissertation will follow Kapp's (2012) ideas regarding this, according to which

the use of serious games will be considered a form of gamification because serious games are a specific sub-set of the meta-concept of gamification [...] The goal of gamification is to take content [...] and add game-based elements (story, challenge, feedback, rewards, etc.) and create a gamified learning opportunity either in the form of a full-fledged educational game, in the form of game-elements on top of normal tasks [...] or in the form of an engaging classroom experience. (18)

2.4. Elements of Gamified Systems

The number of elements that can be adapted from games, and especially video games, to create gamified platforms is wide. Rewards, for instance, can come in the form of experience points (*XP*), gold points (*GP*), bounties, achievements, badges, etc., whereas punishments usually involve taking points of various types

away, reducing the number of points won or banning the user from accessing certain features. Rewards can take place in several events, such as completing quests and doing so in a given time span, engaging in specific or constant behaviours, or taking risks. Punishments, on the other hand, can be applied in events such as breaking the rules, breaking a streak of successes, taking risks to the extreme, or engaging in certain behaviours. Since, at the end, all this depends on the goal of the platform, users might experience rewards or punishments for similar types of events. Thus, if a gamified system wants to promote creativity, the user will be rewarded for creativity peaks, whereas in a gamified system whose main goal is for the user to follow a series of fixed procedures, thinking outside the box will result in a sanction.

Other elements used in gamification are avatars, health points (HP) and ability points (AP), level-ups, progress bars, in-game items, leaderboards, guild systems, special events, narratives, visually appealing materials, etc. From all of the possible game elements that can be applied in gamified systems, points, levels, achievements and badges, and leaderboards seem to have drawn most of the attention among academics (Lister 2015, 6; Nicholson 2015, 1). Thus, due to their apparent relevance, these last elements will be looked into in the next subsections.

2.4.1. Points

Points are a form of rewards which make up the bases of any gamified system (Zichermann and Cunningham 2011, 36). Their main purpose is to attract and engage users with the gamified system (Nicholson 2015, 2) and they can appear in several forms and shapes, such as XP leading to level-ups (Heinzen et al. 2015a, 137; Lister 2015, 8). Reviewing the work of several authors, Lister (2015) notes that they can be given away for tasks of diverse natures, such as class attendance, in-class participation, homework completion, or being creative (8). As happens with other types of rewards, points can perform a series of functions, namely providing the user with feedback, with a way to visually track ones' advances, and with social recognition. In this sense, and based on various sources, Nicholson (2015) summarises their functions as follows:

Points are used as a scoring system, a progression indicator, a scale of rank, a goal setting tool or even as a currency [...] Points encourage mastery of the game [...] They trigger competition which eventually results in a change of players' status [...] [they] measure progression and performance which provoke self-efficacy [...] The social effect of points ranges from status earned by performing certain actions up to reputation that is based on ratings received by others. (35)

With regards to the social aspect, Buckley and Doyle (2014) also note the use of points as a way to make both the player and others aware of the fact that "a level of competence has been achieved" (3). Relating to this last part, Lister (2015) notes that points positively affect students' motivation because they provide them with "instant feedback" (7); in other words, they help students know right away the degree to which their understanding of the matter at stake amounts, giving them more chances to recognise and tackle any problem that might arise during the learning process as well as providing them with autonomy.

As noted above, even though points are the bases of any gamification system since they are required by and interact with a considerable number of gamification elements in order for them to accomplish their functions, as happens with any other elements points alone do not fully enable a gamified system. If this were so, traditional grading systems could be referred to as a gamified system, yet that is not the case. It is therefore important to consider that for a gamified system to achieve its goals, points "must be used in combination with other elements of gamification" (Lister 2015, 7).

On the other hand, points can set the bases to substitute grades for an assessment based on gamification. This type of assessment is known as "game-based assessment (GBA)" (Heinzen et al. 2015b, 201). Despite being a relatively new research field, this type of assessment has already been proven to come with several advantages. It follows the pattern of performance assessment, which "attempts to capture complex skills evidenced through actual behavior rather than relying on a singular right or wrong 'answer'" (205); but first and foremost, since "[g]ames are much kinder and treat failure as information rather than a summary judgement" (206-207), GBA is characterised for its "playful, motivating approach

to failure” (202). Through game-based assessment “[w]e can assess critical thinking skills in a fun, failure-friendly way that reaches across disciplines and real life situations” (210). Although game-based assessment seems to be more suitable for formative purposes, some authors have accepted the challenge to apply this type of assessment for summative purposes as well.

One of these authors is James York who, in his study published in 2012, explains the way he implemented gamification to one of his EFL courses in a private university in Japan. Thus, he began his classes by telling his students that “they all had an ‘F’ and that they would have to work towards getting an A” (22). Afterwards, he explained to them the different ways by means of which they could get XP, mainly through the completion of both individual assignments which were optional, and group tasks which were compulsory; he finally added that, in order to pass the subject, they would need to reach level 12, with the highest level being level 20, equivalent to a grade of 100 (22-23). Although the results during the academic period were promising, since students showed higher levels of engagement with the matter, York points out that “once course grades were released [...] student activity dropped to zero” (24), therefore underlining the fact that true engagement with the subject of English was almost non-existent outside the gamified system. Another of these authors is Alexander Topîrceanu. In his article “Gamified Learning: A Role-Playing Approach to Increase Student in-Class Motivation” (2017), he presents a well-thought-out gamified system in which students learn XP by completing a series of tasks and challenges which, at the end, translate into levels which, simultaneously, correspond to a final grade ranging from 0 to 10 (46). In this case, the results favour the gamified system, with those students taking part in the experiment having higher grades and attendance rates compared to those of the control groups (48).

2.4.2. *Levels*

Levels in gamified systems need to be considered under the lens of a two-fold view since they can be analysed with regards to the player and in relation to the designer of the gamified system.

From the player’s perspective, levels are acquired by means of accumulating XP, which are simultaneously earned by means of completing tasks

(Goehle 2013, 235), and their main goal is to inform the player of their progress inside the gamified system (Zichermann and Cunningham 2011, 45; Goehle 2013, 235). With levels adding a social value to the gamified system, since they serve as indicators of proficiency within the platform (Richter, Raban, and Rafaeli 2015, 34), they have been oftentimes reported to impact positively on users' motivation and engagement (Lister 2015, 8). Additionally, as happens in video games, gaining levels in a gamified platform might provide the user with special rewards. In educational contexts, some example of such rewards are “us[ing] a grade-based reward” (Goehle 2013, 236), or providing “students with single use ‘spells’ or ‘powers’ which will allow them to get help on certain homework problems, [or] extend a due date with no penalty” (236), among others.

From the designer's point of view, levels involve the establishment of the criteria that users need to meet in order to advance both numerically (e.g. a certain player reaching a certain level because they have earned the number of XP required to obtain such level) and through different stages, where the contents that the gamified system offers are presented in small parts by dividing a whole into “small[er] bits of coherent content” (Muntean 2011, 327) to simplify the matter at stake and make it more accessible and clearer to the user. Like academic curricula, content-wise stages are ordered in such a way that users are not allowed to advance to the next level(s) if they have not demonstrated an acceptable degree of mastery of the matter that is covered in a specific level, since it is precisely that degree of mastery that will enable the user to complete the next level and so on. This does not mean, however, that a certain stage can be exclusively accessed via a specific level since contents may be presented and connected in different ways. By advancing through the different levels or stages, users will progressively go through the contents, allowing enough space and time to incorporate them to their inner schemes and to detect where the difficulties might lie. This, as Lister (2015) highlights, ensures “appropriate scaffolding, progression and sequencing through content and activities, in a manner which does not leave the learner frustrated” (8). All this is strikingly similar to the criteria that educators need to consider when designing their curricula and didactic units, thus making gamification an extraordinary candidate to be incorporated in

educational institutions. Similarly, as it was referred to in the previous section where Topîrceanu's (2017) study is taken as an example, the first type of levels aforementioned, that is, those which are established purely in numerical terms through XP gain, can be easily adapted into educational contexts (Goehle 2013, 236) as grading systems, especially taking into account that they share several features with traditional grading systems (Buckley and Doyle 2014, 3).

Finally, it is important to mention Nicholson's (2015) consideration that, in those situations where goals are long-term, rewards should be used with restraint, with their main function being in this case "to help a player know when he or she has done something to move toward that goal" (18). This is why, as in video games, in gamified environments, levels "are [initially] earned quickly but become increasingly difficult to obtain later on [...] set[ting] up leveling as an infrequent reward" (Goehle 2013, 236), which eventually "leads into more meaningful engagement" (Nicholson 2015, 18) by making the user gradually turn their interests and engagement to the contents themselves rather than with the contents through the gamified elements.

2.4.3. Achievements and Badges

Due to their tight relation, achievements and badges will be considered under the same section. Achievements are "optional objectives or goals which are defined outside of the usual parameters of the game" (Goehle 2013, 236), whereas badges are considered as one of the several elements used as "achievement markers" (Flatla et al. 2011, 406). These serve as "signposts" (Nicholson 2015, 18) or "reminders of past achievements" (Richter, Raban, and Rafaeli 2015, 34), which are then materialised in a visual way (Ostashewski and Reid 2015, 187), ultimately "recogniz[ing] learning and assessment that has happened" (188). Other ways in which achievements can be rewarded are honorific titles, unusual amounts of XP or GP, special items, etc.

Goehle (2013) differentiates three types of achievements: 1) those which can be obtained by following the natural course of the game, 2) those which can be obtained with some extra effort, and 3) those which can be obtained by largely shifting from the main goal of the game, with all of them being useful "to increase engagement and interest" (237). Richter, Raban, and Rafaeli (2015) also

emphasise the social aspect that achievements add to gamified systems by underlining the fact that “[a]chievements promote social status; some players become collectors playing thoroughly in order to maximize achievements; they trigger competition and comparison among users due to the rarity of some achievements” (34), although it is necessary to add that they can also trigger cooperation in those cases where achievements require a group to work together towards similar goals. This is also applicable to badges, with people being naturally driven to obtain them for several reasons, such as: a) their potential to provide the owner with status, b) for the sake of collecting them, c) for the joy that obtaining one by surprise might provoke, or d) simply for their aesthetics (Zichermann and Cunningham 2011, 55).

On the other hand, Ostashewski and Reid (2015) underline the fact that badges have been around for centuries (189). They examine some of the traditional contexts where these elements have been traditionally applied:

As military badges of rank or merit, badges have been physical items composed of cloth or metal intended to be affixed to the wearer. Earliest Boy Scout badges were also embroidered patches of cloth representing an accomplishment or to recognize proficiency in a scouting skill. The scout badges were developed to encourage scouts to pursue areas of interest and develop skills that might lead to careers or lifelong hobbies. (189-190)

Even if the idea behind the use of badges in gamified systems has remained almost intact to that behind the use of badges in real life contexts, such as the ones aforementioned, they present a main difference: their inclusion into technological systems. This does not mean, however, that a gamified system must be necessarily based on technological platforms. Digital badges offer users the possibility to check previously earned badges, as well as the efforts that they need to put towards a goal to earn new badges and progress (Hanus and Fox 2015, 154), with the addition that they can access these badges anytime and anywhere through the Internet. Revising the arguments presented by Gianetto, Chao, and Fontana (2013) in their article “Gamification in a Social Learning

Environment” (2013), Ostashewski and Reid (2015) summarise their functions for educational purposes under three points:

First, badges act as *a source of positive feedback* and reward for when students accomplish particular tasks. Second, there is the social component of badges that allow students to *share their accomplishments* with others. Third, badges are designed to *foster a sense of accomplishment* as students progress through pathways leading to more advanced learning material. (194)

Thus, because of the potential that achievements and badges have in advance to provide the achiever/bearer with social recognition, to promote competition and cooperation, to serve as a reminder of those tasks that have been successfully accomplished and those ones that are to be accomplished yet, and to engage and motivate users, it is not strange that numerous gamified platforms have naturally incorporated them. Nonetheless, this does not mean that they are bound to accomplish these functions flawlessly inside a gamified platform. Out of the 19 studies that Lister (2015) examined, she found that the results were inconclusive: “[s]ome research found badges and achievements supported student engagement, while other research found there was no impact or negative impact on student engagement and motivation” (9). Indeed, she notes how in one of the studies examined where both badges and leaderboards were used, the students who underwent the gamified experience “were less motivated and had lower final exam scores than students enrolled in the non-gamified version of the course” (9). Therefore, as with many other aspects of gamification, further research needs to be done to fully establish the different gamification elements that best interact with other element, and in which contexts ones should be given priority over others.

2.4.4. Leaderboards

As defined in the *Merriam-Webster Dictionary*, a leaderboard is “a large board for displaying the ranking of the leaders in a competitive event” (“Leaderboard” 2018). In essence, leaderboards in gamified platforms also respond to such

definition, providing a tool “where players’ scores on given tasks or earned badges are displayed for all players to see” (Hanus and Fox 2015, 154). Of all gamification elements, leaderboards are probably the most problematic due to the fact that, as Zichermann and Cunningham (2011) note, their main purpose is “to make simple comparisons” (50). In a context like classrooms, where comparisons are naturally prone to emerge between students, aiding and reinforcing comparisons will result in effects of diverse types. Indeed, not only will these comparisons affect the students themselves, but also teachers’ perceptions of their students, which can be a decisive factor for students’ academic success as demonstrated decades ago by Rosenthal and Jacobson (1966) in their study “Teachers’ Expectancies: Determinants of Pupils’ IQ Gains.”

In this sense, elements like leaderboards that are based on comparison and competition might be successful among some students while simultaneously provoking undesired effects on other students (Hanus and Fox 2015, 154; Heinzen et al. 2015b, 211; Lister 2015, 10; Nicholson 2015, 14). Comparisons can occur both from bottom to top and vice versa: “[u]pward comparisons occur when the target of comparison is someone who is superior in some way [...] [whereas] downward comparisons occur when the target of comparison is inferior” (Heinzen et al. 2015b, 211). Thus, being at the top might boost motivation and engagement in some students, whereas being at the bottom might cause the opposite for others (Nicholson 2015, 14). Nonetheless, those at the top might feel the pressure to maintain their position as well (Hanus and Fox 2015, 154), eventually resulting in demotivation and disengagement with the gamified platform and, as a consequence, with the matter at hand.

It is also necessary to remember that, as happens with badges, leaderboards are prone to digitalisation, allowing users to “spend as much time as they like checking out each individual classmate or comparing each of their achievements with others’ without anyone else observing or knowing that they are engaging in such deep social comparison” (154). This can potentially lead to some users thinking of others as simple positions in a ranking and, lastly, favour the formation of exclusive and isolated groups in the classroom. It is because of this that, when designing a leaderboard, users’ motivations should be taken into

account so as to make the leaderboard as social as possible (Zichermann and Cunningham 2011, 53). To accomplish this last recommendation, several strategies can be put into action, among which some will be mentioned next. In the first place, users should be given the option to use a pseudonym so that only they themselves know their own identity and position in the leaderboard. Secondly, users might be arranged in the leaderboard attending to criteria other than the number of points they have gained throughout the course, such as the number of hours dedicated to doing homework, the number of instances they have participated in class debates, and so on. In this sense, multiple leaderboards can be implemented in the same course so that more possibilities are given to everyone to reach higher positions based on several strengths. Finally, as Zichermann and Cunningham (2011) explain when referring to “no-disincentive leaderboard[s]” (50), designers can create their leaderboards so that the users participating cannot see everyone else’s positions; rather, they would be able to see a specific number of players who are above and below them (51). This way, providing that participants are not explicitly enumerated in the leaderboard, it would be only those in the first and last position that would actually be aware of their position. If to this last strategy other strategies are implemented, the resulting leaderboard(s) would be less invasive and therefore more welcoming to more students.

2.5. Gamification and Motivation

Most authors agree on the tight relationship that exists between gamification and motivation. Indeed, one of the main goals of incorporating gamification techniques into educational contexts is “to combine intrinsic motivation with extrinsic one in order to raise motivation and engagement” (Muntean 2011, 326). In a broad sense, motivation can be understood as anything that drives a person to behave in a specific manner or to do a certain action or set of actions (Kapp 2012, 12). Most of the body written on this topic agrees on the division of motivation into several types, namely *intrinsic* and *extrinsic*. Ryan and Deci (2000) define intrinsic motivation as “the doing of an activity for its inherent satisfactions” (56), whereas extrinsic motivation as “a construct that pertains whenever an activity is done in order to attain some separable outcome” (60). For

instance, if someone decides to study English because they love languages and take joy from it, then they will be intrinsically motivated to do so; on the other hand, if they study English because it is required to access a job position they are interested in, then they will be extrinsically motivated because, rather than “doing an activity for the enjoyment of the activity itself,” they will be engaging with it for “its instrumental value” (60). Ryan and Deci (2000) further divide extrinsic motivation into four subcategories attending to the *internalisation* and *integration* criteria, with the former being “the process of taking in a value or regulation,” and the latter being “the process by which individuals more fully transform the regulation to their own so that it will emanate from their sense of self” (60). Thus, they argue that, ranging from lower to higher levels of autonomy from users, extrinsic motivation can be classified under: a) *external regulation*, b) *introjected regulation*, c) *regulation through identification*, and d) *integrated regulation*. *External regulation* is “the least autonomous,” and is found in those “behaviours [that] are performed to satisfy an external demand or obtain an externally imposed reward contingency” (61). *Introjected regulation* is also characterised by low autonomy but, in this case, the individual is driven by “the feeling of pressure in order to avoid guilt or anxiety or to [improve] [...] self-esteem” (62). *Regulation through identification* signifies higher levels of autonomy from the individual and refers to “the person [...] identif[ying] with the personal importance of a behaviour and [...] thus accept[ing] its regulation as [their] own” (62). Finally, *integrated regulation* involves the highest levels of autonomy in the classification of extrinsic motivation and, in this sense, it is similar to intrinsic motivation, with the main difference being that, even if it is “volitional and valued by the self,” the individual performs such behaviour or action “for its presumed instrumental value” (62).

In these regards, gamification has drawn considerable attention from educators and researchers since many of its elements function as extrinsic motivators whereas, on the other hand, it is desirable for intrinsic motivation to be prioritised in order to achieve better outcomes. Many authors note that extrinsic motivators can impact intrinsic motivation negatively (Bear et al. 2017, 11; Hanus and Fox 2015, 159; Muntean 2011, 325; Richter, Raban, and Rafaeli 2015, 23), whereas others have obtained both positive and negative results. As example of

such authors is Lister (2015) who, after reviewing 19 practical studies where gamification was used, noticed that “12 of 19 studies reported a positive impact on student motivation” and “a small percentage (10%) of studies reported no impact or negative impacts” (10). Nicholson (2015) points out that gamification systems where rewards are at the forefront can be useful for “immediate and short-term change” (2) as well as for “teach[ing] a skill with real-world value” (3). Nonetheless, he recommends considering that “as the subject then masters that skill and recognizes the real-world value, the rewards are no longer needed, as the subject will continue to use the skill for the real-world benefits instead of the gamification rewards” (3). Therefore, making sure that users perceive a real-world application of the contents that they are being taught is as important as building a gamified system where rewards are balanced in order for users to be as close as possible to becoming intrinsically motivated towards such contents. When what is at stake is a “long-term change,” then rewards should be used scarcely (18). Additionally, he also notes that in those cases in which it is impossible for users to develop intrinsic motivation towards a task, reward-based gamification can come in handy for them to engage with it (3). However, this comes with a warning since, as he underlines, users will expect an increasing amount of rewards and, in order for them to stay engaged, these rewards will have to continuously come in (3).

While criticising the fact that this last remark has been used as a counterargument to prove the inadequacy of gamification, in their book *The Gamification of Learning and Instruction Fieldbook: Ideas into Practice* (2014), Karl Kapp, Lucas Blair, and Rich Mesch provide an example of reward-based gamification:

An example sometimes given of the good of intrinsic motivation versus the bad of extrinsic motivation is using a “star chart” to motivate children. [...] On the first day when you tell your child to brush her teeth, she runs upstairs and brushes her teeth immediately to receive the star. At this point, you think you’ve discovered the secret to parenthood. [...] Then about a week later, you tell your child to brush her teeth and receive a star, she tells you “no.” She doesn’t want to brush her teeth for one star, she

wants two. It is escalating. Soon after [...] [s]he wants a bigger reward for brushing her teeth. Until finally it escalates to a level where to get her to brush her teeth, you have to give her a candy bar. Proof-positive, the critics say, that gamification doesn't work and that extrinsic motivation is all bad. (Chap. 11)

Thus, they conclude, "intrinsic motivation and extrinsic motivation actually work side-by-side and can provide positive motivation for learners," adding that "[f]rom a practical standpoint, it is difficult to separate intrinsic and extrinsic motivation" (chap. 11). In this sense, while delving into the Cognitive Evaluation Theory (*CET*), Hanus and Fox (2015) highlight that external rewards can indeed develop intrinsic motivation depending on whether these external rewards are perceived by the user as *informational* or *controlling*:

If a reward provided for a task is seen as an informational, then it will make one feel competent and in control, leading to higher intrinsic motivation. If a reward is seen as controlling, it makes one feel powerless and incompetent, decreasing intrinsic motivation. (153)

In addition, in their recent study "It's about Time: Earlier Rewards Increase Intrinsic Motivation" (2018), Kaitlin Woolley and Ayelet Fishbach found out that the immediacy in the delivery of a reward also affects the extent to which intrinsic and extrinsic motivation are affected. They obtained some compelling results, demonstrating that, in general, the more immediately a reward is given away for a task, the more that intrinsic motivation will increase (884).

Since, in the end, the issue at stake with gamification is the use of extrinsic motivators in order to positively affect intrinsic motivation, a "careful selection and implementation of these motivators" is needed (Richter, Raban, and Rafalei 2015, 38). Although still being a controversial issue, efforts must remain being directed towards finding out the best way to implement gamification techniques and systems in those contexts that crave for innovation as is the educational scene.

2.6. General Recommendations

To aid and encourage those readers who are interested in the task of implementing gamification themselves, in this section some general recommendations to be considered to make a gamified system as motivating and engaging as possible will be presented. Additionally, some myths that surround gamification will be deconstructed in order to keep common mistakes to a minimum.

For a gamified system to have high chances of success, it is crucial to plan it thoroughly in advance. For this, Dale (2014) recommends: 1) making sure of the desired outcomes of the gamified system, 2) knowing as much about the users as possible to incorporate their personalities and interests into the system, and 3) using different types of rewards in a limited way (88). Regarding this last point, contrarily to what many studies are based on, Kapp (2012) clarifies that “[b]olting one or two game elements onto boring content is not an effective use of gamification” (14). Kim (2011) shares this view, adding that a mixture of well-thought mechanics, dynamics, and aesthetics should always be at the crux of any gamified system. As a matter of fact, she considers game dynamics to be more relevant than game mechanics. While the latter usually serve as indicators of progress by using points, levels, or badges, among others, it is through the former that these rewards are distributed in a scheduled way through “reinforcement schedules,” which are useful “to build habits through surprise” and are indeed the ones used in slot machines (Kim 2011). Deci, Koestner, and Ryan (2001) proffered this idea a decade ago, stating that “[i]f tangible rewards are given unexpectedly to people after they have finished a task, the rewards are less likely to be experienced as the reason for doing the task and are thus less likely to be detrimental to intrinsic motivation” (4). Thus, efforts should be directed towards making changes that go beyond the surface, with contents having to be adapted to fit in the desired gamification system and vice versa.

In addition, Kapp (2012) highlights the importance for a gamified system to provoke “an emotional reaction” from users (11). Similarly, Kim (2011) points out that, although fun tends to be considered the essence of gamification, making users feel positive emotions such as trust, security, or the sense of discovery is

indeed more central for the success of a gamified system. In order to predict the users' acceptance of and reactions to a gamified system, it is important to know the audience that it is directed to. In his article "Hearts, Clubs, Diamonds, Spades: Players Who Suit MUDs" (1996), Richard Bartle differentiates four types of players attending to their expectations from a game: *achievers*, *explorers*, *socialisers*, and *killers*. In broad terms, *achievers* are those players that focus on "points-gathering and rising in levels." *Explorers* enjoy discovering the ways in which the different mechanics of the system work. For *socialisers*, "[i]nter-player relationships" are the key aspect, with the game being "merely a backdrop, a common ground where things happen to players." Finally, *killers* tend to take joy in fiercely competing with other players, and will do whatever it takes to win the match, even if this means "attack[ing] other players with a view to killing off their personae." Bartle (1996) also highlights that, preferably, there should be a balanced number of players that fit into each category:

a sharp reduction in the number of explorers for whatever reason could mean a gradual reduction in achievers, who get bored if they're not occasionally told of different hoops they can jump through for points; this could affect the number of socialisers (the fewer players there are, the less there is to talk about), and it would certainly lower the killer population (due to a general lack of suitable victims).

Nevertheless, since according to this division players statically belong to either one or another category, added to the fact that it has not been empirically validated, Bartle's model has received some criticism. Kim (2011) suggests adding to this categorisation those players whose main drive is the need to express themselves in creative ways. On the other hand, Yee (2006) carried out a survey-based study among 3,000 players to examine the extent to which Bartle's division can be considered as valid. The results reveal "10 motivation subcomponents that grouped into three overarching components" (772), with the latter being the *achievement*, the *social*, and the *immersion* components. This is summarised in Table 1 below.

Table 1. *Categorisation of MMORPG players*

| <i>Achievement</i> | <i>Social</i> | <i>Immersion</i> |
|--|--|---|
| Advancement Progress, Power, Accumulations, Status | Socializing Casual Chat, Helping Others, Making Friends | Discovery Exploration, Lore, Finding Hidden Things |
| Mechanics Numbers, Optimization, Templating, Analysis | Relationship Personal, Self-Disclosure, Find and Give Support | Role-Playing Story Line, Character History, Roles, Fantasy |
| Competition Challenging Others, Provocation, Domination | Teamwork Collaboration, Groups, Group Achievements | Customization Appearances, Accessories, Style, Color Schemes |
| | | Escapism Relax, Escape from Real Life, Avoid Real-Life Problems |

(Based on Yee 2006, 773)

Most importantly, and differently to Bartle’s hypothesis, this study reveals that these categories are not mutually exclusive: “[i]f a player scored high on the achievement component[,] that did not mean they scored low on the social component [...]; correlations among the three main components are weak” (Yee 2006, 774).

Finally, when designing a gamified system, it is necessary to consider the need to present users with optimal levels of difficulty. This translates into designing levels whose difficulty increases progressively and through which users can apply their recently acquired abilities. Kim (2011) differentiates three types of players according to expertise: *newbies*, *regulars*, and *enthusiasts*. In order to keep users engaged, the system will have to cater for their needs at every stage. *Newbies* are players who are not familiar with the gamified system, and therefore need to learn the basics. Thus, they need to be welcomed into the system and, since they need to keep track of their advances to clarify their position inside the system, they prefer clear goals, progression markers, and achievable rewards. Once they are familiar with the system, players are considered as *regulars*, and they will need continuous incoming new content, activities, and challenges. Finally, *enthusiasts* represent the highest position in the scale of expertise. To cater for their needs and keep them engaged, the system will have to provide them with access to exclusive contents, recognition,

and the possibility to have a greater impact on the system than *regulars* and *newbies* can. Thus, it is of extreme importance to foresee users' capabilities during the design process so as to adapt the difficulty of every level to keep their interest in the tasks at hand.

3. Method

This study involved 29 students from two different educational levels in a charter school in Palma de Mallorca (Spain) for the subject of English as a Foreign Language (EFL). The first group consisted of 11 students, 6 males and 5 females; they were between 14 and 16 years old and were in their 3rd year (out of 4) of Compulsory Secondary Education (*ESO*). The second group consisted of 18 students studying their 1st year (out of 2) of Non-Compulsory Secondary Education (*Bachillerato*). These participants were between 16 and 18 years of age, with 7 of them being males and the remaining 11 being females. The duration of the study extended for a period of three academic weeks, covering 9 sessions of 50 minutes each with every one of the groups.

To record variations in students' motivation, data were obtained by means of two questionnaires, one conducted prior to the beginning of the experiment and the other one after its end. Although the motivation behind each questionnaire was similar, the first questionnaire also aimed at gathering data regarding the methodology of their regular teacher to take this variable into account and see how these results compared to those obtained in the second questionnaire. In addition to the data obtained from these two surveys, both students' answers to a weekly portfolio that they were encouraged to complete as well as the teacher's perceptions will be considered. To ensure full comprehension and accuracy in students' answers, the questionnaires were conducted in Spanish, although students could fill them in in Spanish or Catalan.

Each questionnaire was divided into six sections, with five of them being common to both surveys and one being different. Section one dealt with students' personal information: 1) age; 2) gender; 3) self-assessment of their linguistic abilities in Spanish, Catalan, and English; and, 4) grades for the English subject. Section two dealt with students' perceptions regarding: 1) the adequacy of the difficulty level of the subject; 2) its appeal to them; and, 3) the extent to which

classes were fun. Regarding points 2) and 3), an additional question was added to allow students to make suggestions as to how the subject can be improved. Section three dealt with students' opinions on the materials used: 1) the extent to which a) the book, b) audio-visual materials, and c) ludic materials were used; 2) whether they considered that a wide range of materials had been used; 3) whether the materials facilitated the learning process and helped maintain or increase their interest towards the subject; and, 4) whether the difficulty level presented by the materials was suitable. Section four aimed at collecting data regarding: 1) the types of groups that were used more frequently (individual work, pairs, and groups of 3 to 5 people); 2) the extent to which different types of groups were used in a balanced way; 3) whether groups tended to be comprised of the same people; and, 4) students' opinion with regards to working with different people. This last question only appeared in the second survey. Section five differs in both questionnaires. In the first one, this part dealt with students' views regarding several statements in order to check their personal interest for the subject, and which factors might have a negative impact on it. In the second survey, this section dealt with students' perceptions on the use of ICT in the classroom; more specifically, on the introduction of *Classcraft*. Finally, in section six students were asked to provide a general evaluation of the subject

Nine 3rd of *ESO* students (from now on G1) and fifteen 1st of *Bachillerato* students (from now on G2) filled in the first survey. Nevertheless, one response had to be discarded since it was duplicated. On the other hand, the second survey reached full participation, resulting in 11 responses from G1 and 19 from G2. However, one response had to once again be discarded since it had also been duplicated. This rise in students' participation is partly because the first survey was conducted exclusively through *Google Forms*, meaning that students needed a stable Internet connection, which was not accessible to all of them, in order to fill in the surveys. Thus, the second surveys were provided both digitally and through hardcopies, with the results from the latter being afterwards manually digitalised by introducing them in *Google Forms*.

With the exception of a few questions in which students could provide a free-answer in their own words, the rest of the items included in these surveys

produced qualitative data, since students had to answer according to a numeric scale ranging from 1 to 10. For simplification purposes, the data obtained from such questions were transformed into mean values and introduced in *MS Excel* to represent them visually in the forms of graphs to illustrate the evolution and variation of responses in the initial and final questionnaires. In these graphs, the answers from the questionnaire prior to the beginning of the experiment will be referred to as *prior*, whereas the ones from the questionnaires completed once the experiment was over will be referred to as *post*. In addition, a colour code will be used, with light blue and light green representing *prior* 3rd of *ESO* (G1) and *prior* 1st of *Bachillerato* (G2), respectively, and dark blue and dark green being used for *post* G1 and *post* G2, respectively. Regarding those questions aimed at producing qualitative data, the answers included information on students' perception of the classes, as well as suggestions as to which materials, contents, strategies or dynamics should be improved, changed, or deleted. These were not the only sources of qualitative data, since both the students' weekly portfolios and teacher's perceptions need to be considered as well.

Students were, in the first place, encouraged to create a *Classcraft* account using the code provided by the teacher. Afterwards, they had to create an avatar and select one of the three classes (warrior, mage, or healer) available. In order to help them choose their class, the teacher had explained to them each that every class had different powers and spells which they could use in the classes for different purposes. They were given access to a document where both the different aspects of the gamified platform and the rules created by the teacher were explained. *Classcraft* was used to provide students with XP, which resulted in level-ups and in access to new abilities. They were also provided with GP, which they could use to buy cosmetic items for their avatars in the platforms' store. They could obtain these by means of participating in class, achieving different goals, defeating a boss, or completing homework through the platforms' function *Quests*. In the latter, a personalised story was created and added, so that students could advance in the narrative by completing their homework.

Of all the gamified activities done in class, some were common to both groups with slight adaptations from one to another, whereas others were

exclusively used in either of the groups. The activities that were common to both G1 and G2 were: 1) a class-wide boss fight through *Classcraft* with ambience music from *World of Warcraft* where they had to use the answers that other students submitted previously in a class chat in order to defeat the boss; 2) a table board game that included silly challenges to create a relaxed atmosphere while simultaneously practicing the use of passive structures in English, as well as some vocabulary; and, 3) a match of *Quiplash*, a complete game which was adapted to perform educational purposes, and which served to revise everything done throughout the eight previous sessions. On the other hand, the tasks which were exclusively applied in G1 were: 1) a *Catch the criminal!* game, where every student had to exploit the role they were given to either help the police catch the criminals or hinder the investigation and save themselves and others from going to prison, and 2) a *Design your invention!* activity, where students were free to invent anything, as useless as it might be, and afterwards present and sell it to the rest of the class, who were in charge of assessing those who were presenting their invention. All these activities can be found on the website⁴ that was specially created to help students follow everything done in class.

4. Results

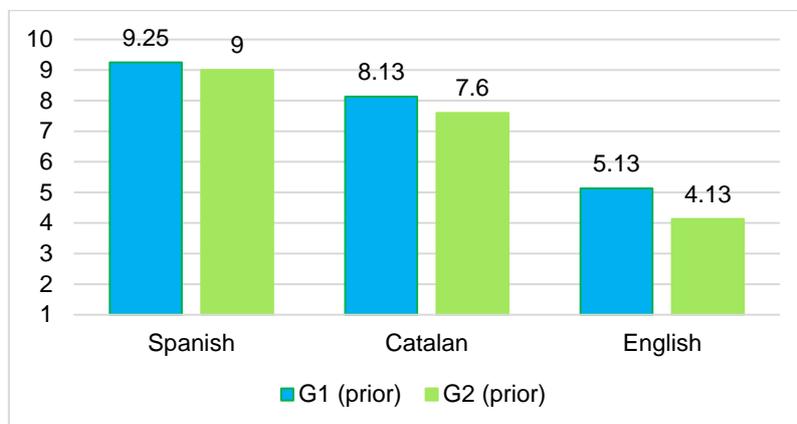
4.1. Students' Self-Assessed Linguistic Competence

In this section of the survey, students were asked to value from 1 to 10, with 1 representing a beginner of the language and 10 a native person, their self-perception regarding their command of the Spanish, Catalan, and English languages. This was aimed at exploring students' self-perceived linguistic competences in both the official and co-official languages of the Balearic Islands, as well as the language that is most widely studied in schools as a foreign language, that is, English. Ultimately, its goal was to discover if a correlation between different levels in the command of the English language and different effects after applying gamification techniques could be considered. This was not the case since, even though both groups express similar values for their linguistic

⁴ The website *Dani's English*, which was created using Google's free platform *Google Sites*, can be accessed through the following link: <https://sites.google.com/view/simenglish/main-page>.

competence in English (see Figure 1 below), applying gamification affected them in different ways, as it will be seen throughout the following sections.

Figure 1. *Students' self-assessed linguistic competence*



On the one hand, the fact that G1 scored one point higher than G2 for English can be interpreted in different ways. Firstly, since students in G1 are younger than those in G2, they might not be as influenced about what it really means to be a native speaker. Secondly, students in G1 are still getting familiar with the grammar of the language, whereas those students in G2 have already studied some and more complex contents; therefore, G2 students are believed to have been more humble and self-aware of their answer in these questions. However, this could simultaneously reveal undermined levels of intrinsic motivation to learn English in G2 since, although they had a broader knowledge of English than G1 students, they were more critical when rating their own level in the foreign language, thus affecting their predisposition to learn it. On the other hand, the fact that all the students considered their level of Spanish higher than their level of Catalan might be motivated because, as it is stated in the Centre's Educational Project (*PEC*), most students come from backgrounds where Spanish is the preferred language of communication (Consell Escolar 2017, 5).

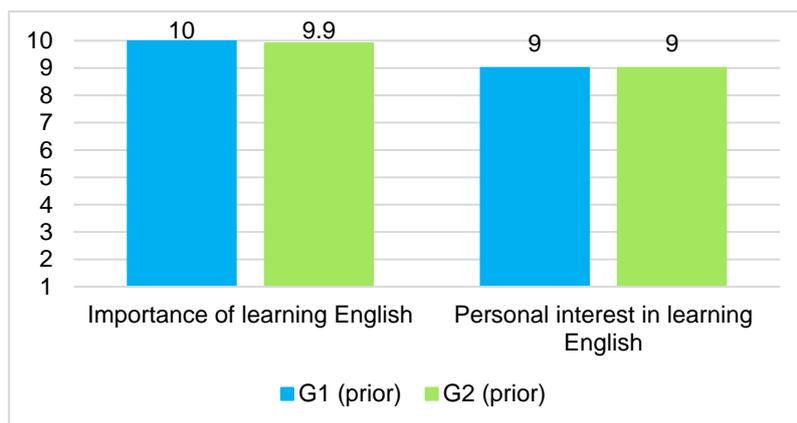
4.2. Interest

4.2.1. *Students' Personal Interest and Predisposition*

In this part of the survey, students were given two statements, which they had to value from 1 to 10, with 1 being "I completely disagree" and 10 representing "I

completely agree.” The first statement was “I think that learning English is important for my future,” whereas the second was “I am personally interested in learning English.” These statements aimed at knowing whether students were intrinsically motivated to learning the language and, if this were the case, to discover whether there were other factors that might obstruct their will to do so.

Figure 2. *Importance of and personal interest in learning English*

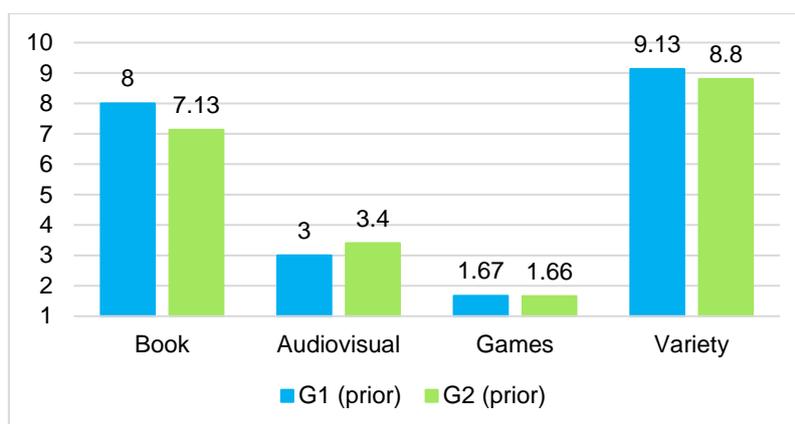


As illustrated in Figure 2, the results are strikingly identical for both groups. Thus, not only are they aware of the utility of the English language but also clearly predisposed in learning it. This is of much importance both when learning and teaching new contents. If students do not see the functionality of such contents, they will be less motivated to learn them since, in the end, there would be no real goal attached to them and, therefore, no reason as to why they should be learnt.

4.2.2. *The Effect of Materials on Students' Interest*

As in the previous section, in this case students were asked to value four statements, with 1 being “I completely disagree” and 10 “I completely agree.” Three of the statements were quite similar, only varying in the type of materials that they focused on. More specifically, the students were asked to rate the extent to which they agree or disagree with the following statement(s): “I think that an excessive use of (the book/audiovisual materials/games) in class makes me lose interest in the subject.” The fourth statement was “I think that regularly using a wide variety of types of materials in class positively affects my interest for the subject.”

Figure 3. *Students' views on the effect of materials on their interest*



As can be seen in Figure 3, most of the students agree on the fact that an excessive use of the book can harm their interest in the subject. In contrast, they claim that widely using audiovisual materials would not affect their interest negatively, with this being even clearer for games for both groups of participants. Nevertheless, this does not mean that exclusively using either audiovisual materials or games would positively affect their interest since, far and wide, they agree on the fact that using various types of materials in a balanced way would have the most positive impact on their interest for the subject.

4.3. Methodology

4.3.1. *Regular Teachers' Methodology*

This section corresponds to responses from the *prior* survey. It aims at concluding what type of methodology was used by the students' regular teachers and to what extent they differ from each other. If this were the case, this issue will be explored in detail in the section where the *post* surveys will be analysed, comparing the results from both *prior* and *post* questionnaires.

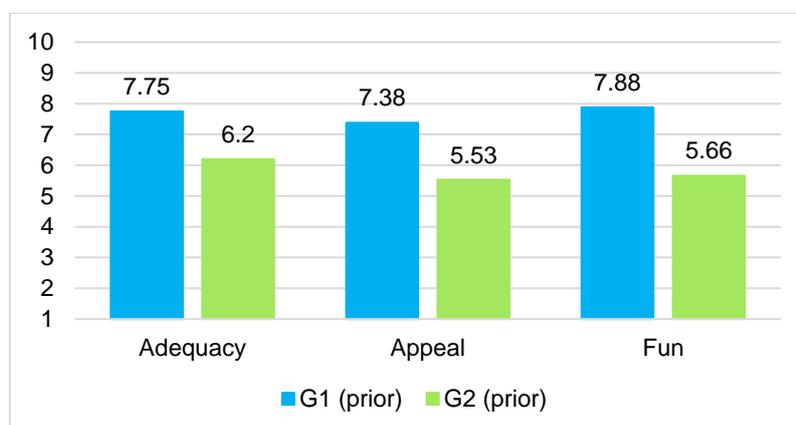
Several factors were considered in this part of the survey; more particularly: 1) whether students considered their classes as adequate, appealing, and fun; 2) whether some types of materials were used over others; and, 3) whether group dynamics were used and to what extent one type of group configuration prevailed over others. Ideally, the scores for adequacy, appeal, and fun should be high and balanced. Regarding types of materials, scores should be low, with the score for using a wide variety of materials being high, meaning no

type of materials is excessively used in the EFL classroom. Regarding the outcomes of the use of materials, scores should be high, meaning they facilitate learning, help students maintain or increase their interest in the subject, and are adequate to their level. Finally, regarding group dynamics, no high score for a particular group configuration should be found. Additionally, high scores should be obtained regarding the regular combination of different types of groups, and low scores should be obtained regarding groups having the same components. The results obtained in all of these questions will be presented in the three following subsections.

4.3.1.1. Adequacy, appeal, and fun

In this section, students were asked whether they considered that their classes had been adequate to their level, appealing, and fun hitherto. For this, they had to choose a value ranging from 1 to 10, with 1 being “not adequate/appealing/fun at all” and 10 being “very adequate/appealing/fun.” Additionally, a box was enabled so that students could leave their comments as to how they thought that the classes could be made more appealing and fun.

Figure 4. *Students’ view on their classes’ adequacy, appeal, and fun*



As illustrated in Figure 4, the results reveal that, so far, those students from G1 had had a teacher whose approach seems to be balanced, with all scores being close to 8. Nevertheless, the results obtained from the other group decreased to values around 5.5. This may suggest a difference in the approach used by the regular teacher in G1 and that teacher in G2, a suggestion that will

be further consolidated throughout the analysis. Regarding appeal and fun, when asked how the classes could be improved in these regards, several students from both groups insisted on introducing the use of more games and audiovisual materials: “[h]aciendo juegos con los que podamos aprender,” “utilizando alguna aplicación o juego que nos pueda llamar la atención,” “[v]iendo series en inglés.” Other students asked for a more communicative approach: “[m]ore speaking,” “[a]yudarnos a expresarnos mejor hablando inglés.” Finally, it is remarkable to mention the critique that a student makes of the current status of education, which favours memorisation over critical thinking and obliges teachers to assess through exams despite trying to promote, on the other hand, an education based on competences: “[e]nfocar las clases de otra manera [...], cambiar el temario para promover el aprendizaje y no solo el estudio con el fin de conseguir una nota.”

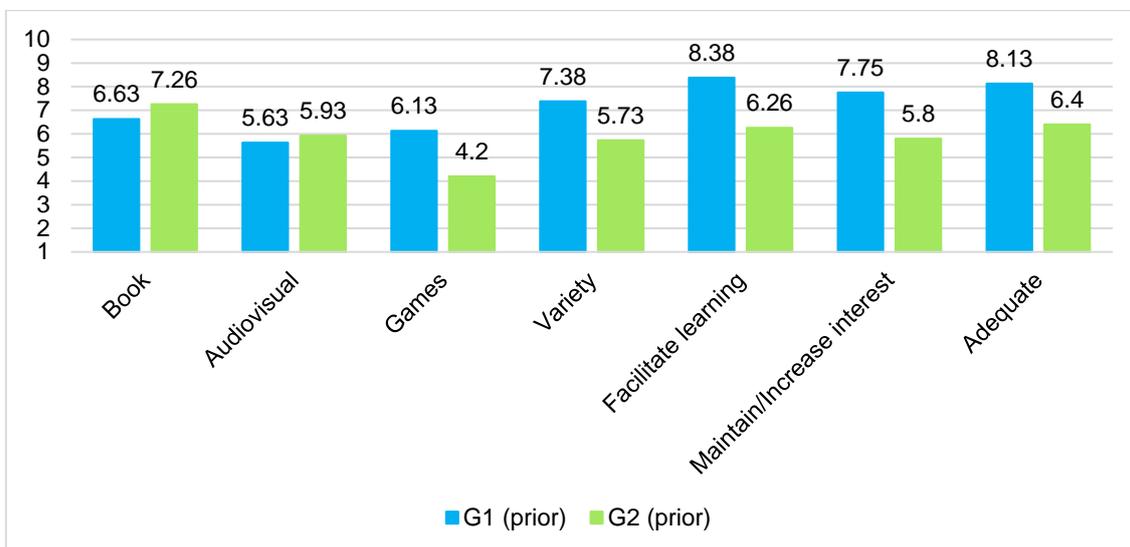
4.3.1.2. Materials

To find out whether teachers had been favouring the use of a specific type of material or, conversely, making use of different materials in a balanced way, as well as to know whether these materials were suitable for the students' level, the participants were asked to indicate their degree of agreement with several statements by once again using a scale ranging from 1 to 10, with 1 being complete disagreement and 10 complete agreement. More specifically, four statements were related to specific types of materials; three of them very similar, following the structure: “I think that in class we use (the book/audiovisual materials/games) a lot.” The fourth item within this section was: “I think that, overall, we frequently use all types of materials in class.” Thus, ideally, for the first three statements, values close to 5 should be obtained, whereas for the second statement these values should be as high as possible.

Afterwards, three questions were included regarding the effect students believed that the aforementioned materials had on their learning, interest, and adequacy to their level: “I think that the materials used in class facilitate the learning of the subject,” “I think that the materials used in class help me keep interested in or increase my interest for the subject,” and “I think that the difficulty

presented by the materials is adequate to my level.” In this sense, the scores obtained should ideally be as high as possible.

Figure 5. *Prevalence of materials in students’ regular classes*



As illustrated above in Figure 5, regarding the use of specific materials, it seems that the teacher in G1 has been using a relatively balanced approach, with all three types of materials specified obtaining scores close to 6. Indeed, to the statement referring to a balanced use of all types of materials, this group’s responses score up to a mean value of 7.38. On the other hand, in the case of G2, there is a clear prevalence in the use of the book, scoring higher than 7 and being 1.33 points above the second material that scores the most, that is, audiovisual materials. It is important to mention how, compared to the results from G1, the use of games significantly decreases from 6.13 to 4.2. There is a similar trend regarding the use of a wide variety of materials, which drops from 7.38 in G1 to 5.73 in G2.

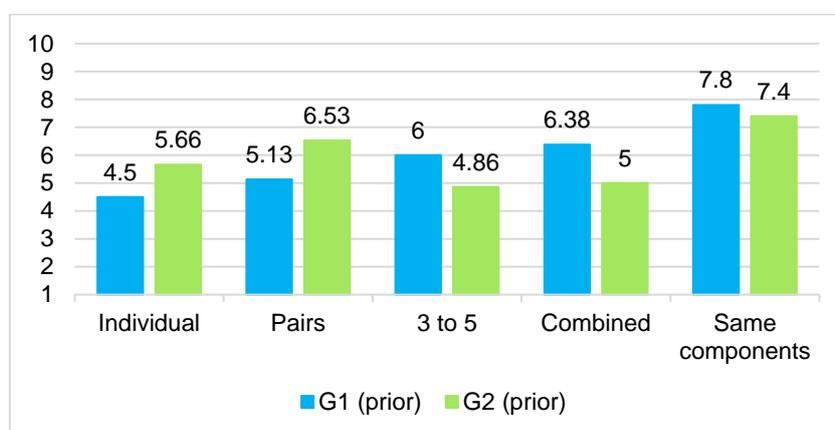
Regarding the extent to which students find the materials useful, interesting, and adequate, the differences are even more noticeable between G1 and G2. While all the results from G1 are close to or surpassing 8 points, those from G2 are around 6.15. The fact that the scores are so high in one group and so low in another is preoccupying. While students in G1 have been exposed to a balanced approach that is effective in maintaining or even increasing their interest in the subject, students in G2 display the opposite results. These students deem

the subject inadequate to their level, not appealing, and boring. Furthermore, contrarily to games, not only believe the students that the book is used in excess, but also that the materials used do not facilitate their learning, are not adequate to their level, and are generally unsuccessful in engaging them with the English subject. From this, it could be argued that students in G2 have been exposed to a predominantly traditional approach to teaching, with sporadic inclusion of games and audiovisual materials. These students have more reasons for feeling demotivated towards their English classes and the subject in general, whereas those students in G1 are more motivated and more engaged with the subject.

4.3.1.3. Group dynamics

Since one of the differences between traditional and modern methodologies is whether individual or group work is favoured, several questions in these regards were included in the *prior* survey. Out of five questions, three were oriented towards the use of different types of groups according to their size: “when it comes to doing activities in class, they are done above all (individually/in pairs/in groups of 3 to 5 people).” The fourth question aims at knowing whether any specific type of group is favoured: “when it comes to doing activities in class, groups of different sizes are frequently created and combined.” Finally, the fifth question aims at gathering data regarding the people that usually form the aforementioned groups: “when groups are created in class, they tend to be composed by the same people every time.” The results are illustrated below in Figure 6.

Figure 6. *Trends in group dynamics*



According to the results, compared to the responses collected from G2, those responses from G1 showcase lower scores for individual (4.5 vs 5.66) and pair work (5.13 vs 6.53), whereas the score is higher for groups of 3 to 5 people (6 vs 4.86). Thus, in G1 pair and group work in groups of 3 to 5 people seem to be more frequently used than individual work, whereas in G2 individual and pair work seem to be more frequently used than groups of 3 to 5 people. Nevertheless, considering the results for question number four, where G1 obtained a score of 6.38 and G2 a score of 5, students in G2 seem to perceive a greater monotony regarding the formation of groups as compared to those students in G1. On the other hand, regarding question number five, both G1 and G2 obtained scores higher than 7 (7.8 and 7.4 respectively), meaning that students tend to be paired with the same people over and over. Since it is extremely important that all students have the chance to get to know and work with every other student in the class, as well as to avoid monotony as much as possible, this, among other things, was tackled during the gamified experience.

4.3.2. *Gamification*

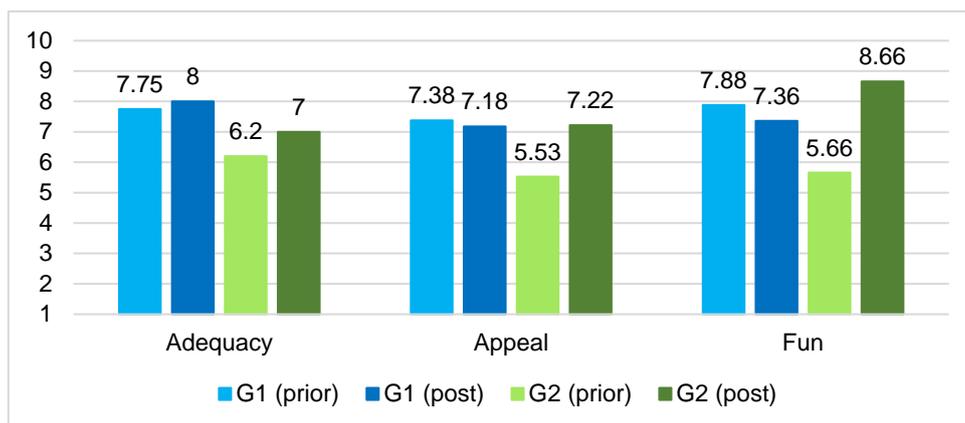
This section corresponds to those answers from the *post* surveys, and aims at describing how students responded to the different stimuli presented by gamification. To register the different changes that might have taken place, the questions and structure of both surveys were almost identical to those presented throughout the previous section, with a new subsection on *Classcraft* being introduced. Therefore, except with the exception of the subsection aforementioned, several figures with the results from both *prior* and *post* surveys will be provided so as to illustrate the evolution of the results.

4.3.2.1. Adequacy, appeal, and fun

In this part of the questionnaire, students had to answer three general questions regarding the adequacy of the gamified sessions to their level of English and the extent to which they believe that these sessions were appealing and fun for them. To do so, they had to select an option from a scale ranging from 1 to 10, with 1 being “not adequate/appealing/fun at all” and 10 being “very adequate/appealing/fun.” The results are illustrated in Figure 7 below. The light

blue and light green bars (G1 and G2 *prior*) correspond to the results that have already been presented in the previous sections, whereas the dark blue and dark green bars (G1 and G2 *post*) illustrate the findings that will be analysed in detail within this part of the dissertation. Hence, the same color code will be used throughout the following sections.

Figure 7. *Students' view on the gamified classes' adequacy, appeal, and fun*



As it can be inferred from Figure 7, overall, the results are satisfactory, with no score being lower than 7. In the case of G1, and except for the score for adequacy, the rest of them slightly decreased as compared to those from the *prior* survey. Nonetheless, and more interestingly, the scores for G2 substantially increase from *prior* to *post*, namely adequacy rises from 6.2 to 7, appeal from 5.53 to 7.22, and fun from 5.66 to 8.66.

The results that reflect the impact of the gamified sessions the most are those for appeal and fun. In these regards, the fact that the scores for G1 were slightly lower than those from the *prior* survey might be motivated because, as it was advanced in the previous sections, their regular teacher already made use of a balanced approach where all kinds of materials, including games, were considered as suitable for instructional purposes. In fact, to the question “how do you think that the classes could have been made more fun?” a student from G1 answered “[h]aciendo otro tipo de juegos [u] otras cosas de las que hemos [h]echo en el 2^o trimestre.” Even if it was in this group that gamification was applied the most, to that same question, another student answered: “[má]s juegos.” Although gamification tends to be embraced by students and provide

positive results quickly if applied properly, as Kapp (2012) points out, “[i]f gamification is seen as a panacea and applied to every single event, it will quickly become trivialized and non-impactful” (14). Thus, it is no coincidence that the group that was most exposed to gamification eventually expressed the most negative scores in the *post* surveys.

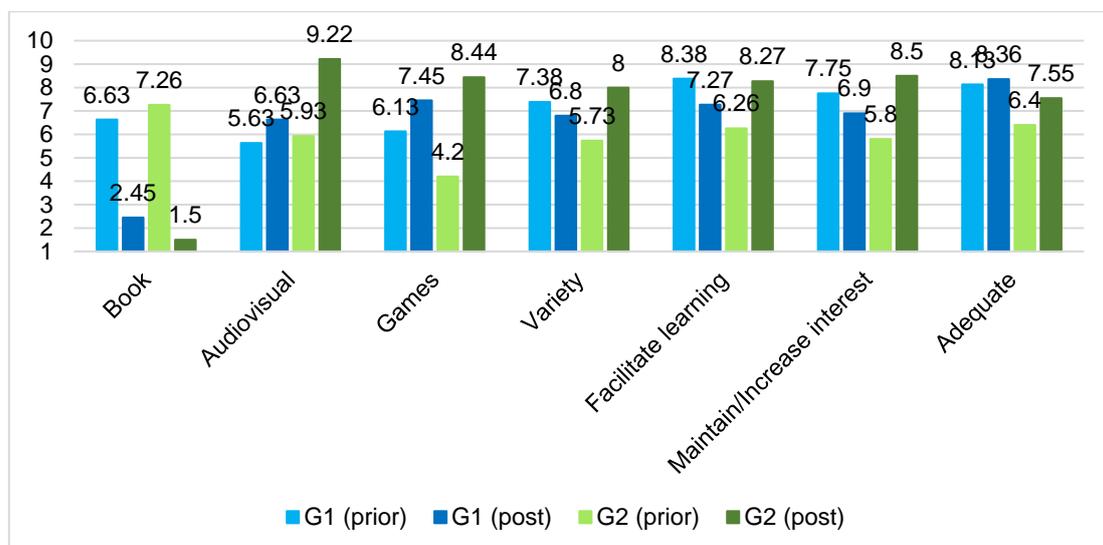
Quite a different situation can be observed when observing the results obtained by G2 students since their scores sharply increased for appeal and fun, evidencing their previous need for a methodological change. Before introducing them to the gamified sessions, they hardly found a reason to engage with the subject, presumably considering it off-putting and boring. Conversely, after being exposed to gamification, the scores escalated, with students enjoying their classes more than ever. This is reflected in most of the qualitative feedback where one student, for instance, says: “ha sido muy diferente a cómo las hacíamos antes[.] [P]ienso que deberían hacerse siempre así, es una buena forma de aprender un idio[m]a y ponerle más interés.” Another student points out: “de esta forma pienso que se aprende más porque es mucho más interesante y encuentro que le pones más interés ya que no te aburre.” Nonetheless, worryingly enough, when asked how these classes could have been improved, one student suggests that more games should be included and, most importantly, that more rewards should be given through *Classcraft*: “m[á]s juegos o recompensa[s] en el classcraft por ejercicio resuelto bien.” Considering what was previously presented in the literature review regarding the dangers that constant rewards might pose on intrinsic motivation, this seems to be the case for this student. Not only is the reception of rewards this student’s main drive to remain engaged but also, in as little time as 9 sessions, she has already got to the point where constant rewards are required to maintain engagement. Thus, when applying gamification, it is important to frequently scan our users’ evolution inside the system to make the necessary changes to redirect them into our main goal before things get out of control.

4.3.2.2. Materials

This section of the survey aimed at checking whether students’ perceptions about the materials used in class aligned with the goals planned for the gamified

sessions. To collect the necessary data, as in previous sections, students had to express their agreement with a set of statements by selecting a value between 1 and 10, with 1 representing complete disagreement and 10 absolute agreement. There were four statements related to specific types of materials, with three of them being similar and represented here as one: “I think that in class we have used (the book/audiovisual materials/games) a lot.” Although, ideally, the scores for these statements should be proximate to 5, the expected results should showcase, at least, values close to 1 for the use of the book, values above 5 for the use of audiovisual materials, and values close to 10 for the use of games. The fourth statement referred to a balanced use of all types of materials in class: “I think that, overall and frequently, we have used a wide variety of materials in class.” Although ideally values as close to 10 as possible should be obtained, since the book was rarely used, the expected real values should be lower than 10. Finally, there were three statements which referred to the effect of such materials on students’ learning, interest for the subject, and adequacy to their level: “I think that the materials used in class have facilitated the learning of the subject,” “I think that the materials used in class have helped me keep interested in or increase my interest for the subject,” and “I think that the difficulty presented by the materials has been adequate to my level.” In these regards, the obtained values should ideally be as proximate to 10 as possible.

Figure 8. *Prevalence of materials in students’ gamified classes*



As illustrated in Figure 8, regarding the use of the book, which was kept to a minimum during the experiment, it is noticeable how the results obtained sharply drop in comparison to the findings obtained in the *prior* surveys. More specifically, these values drop in G1 from 6.63 to 2.45 points, whereas for G2 the drop is even more significant, from 7.26 to 1.5 points. This goes hand in hand with the expected results since, even if they were aimed at practicing book contents, during the experiment most of the games and materials in general were self-made.

On the other hand, although audiovisual materials had an important presence in most of the sessions, the results for G2 are striking. While the score from G1 increased from 5.63 to 6.63, the scores obtained from G2 escalated from 5.93 to 9.22. Although the score obtained by G1 was predictable, the data gathered from G2 is interesting, considering that these values are even higher than those for the use of games, which were indeed more extensively used than audiovisual materials. A possible explanation for this might be the fact that, while the regular teacher in G2 used to project a digital version of the book on the whiteboard, which students might have considered as an (audio)visual material, during the gamified sessions a much wide variety of audiovisual materials were used: from static images to videos to music to games. This possibly affected students' perception on this matter.

Games and game dynamics were at the forefront in most of the sessions. Thus, as expected, students' general opinion is that games were used quite a lot. However, the results obtained for each of the groups are relatively different. In the case of G1, there is an increase from 6.13 to 7.45 points, whereas for G2 the increase is once again much more noticeable, doubling from 4.2 to 8.44. Even if in G1 games and gamification techniques were more extensively used than in G2, since their usual teacher regularly incorporated games into their classes, the impact is not as significant as on G2. The sharp increase in G2 can be explained because, for these students, the sudden inclusion of games and game dynamics as serious teaching materials meant a radical change which brought with it a completely new vision as to how classes could be organised and developed.

Similarly, the results obtained for students' views on whether a wide variety of materials had been used, which mainly contemplated books, worksheets, audiovisual materials, and games, differ from one group to another. While in G1 the scores drop from 7.38 to 6.8, in G2 they increase from 5.73 to 8. The reason for this is precisely the same one presented in the previous paragraph. While students in G1 equally value all types of materials, since they had been taught so far using a balanced approach to teaching, those students in G2 present a different perspective. Hitherto, they had been exposed to a teaching methodology that made books obtain the highest results and games the lowest ones in the *prior* survey. This, added to the positive results obtained now for the materials' potential to facilitate learning, keep or increase their interest for the subject, and be adequate to their level, may have made them abhor the book and automatically exclude its little use from the equation when valuing their degree of agreement with the statement regarding the balanced use of all types of materials in class during the experiment.

The tendency remains unchanged in the results of those questions related to learning outcomes, interest, and adequacy. Thus, overall, students in G1 consider that all the materials used in class do not facilitate their learning (going from 8.38 to 7.27) or help them maintain or increase their interest for the subject (from 7.75 to 6.9) as much as the materials that they used with their regular teacher, whereas they deem them slightly more adequate (0.23 more points than the original score) to their level. Conversely, students in G2 think that the materials used throughout the gamified sessions facilitated their learning (from 6.26 to 8.27), helped them maintain or increase their interest for the subject (from 5.8 to 8.5), and were adequate to their level (from 6.4 to 7.55) to a greater extent than the materials that they used with their regular teacher.

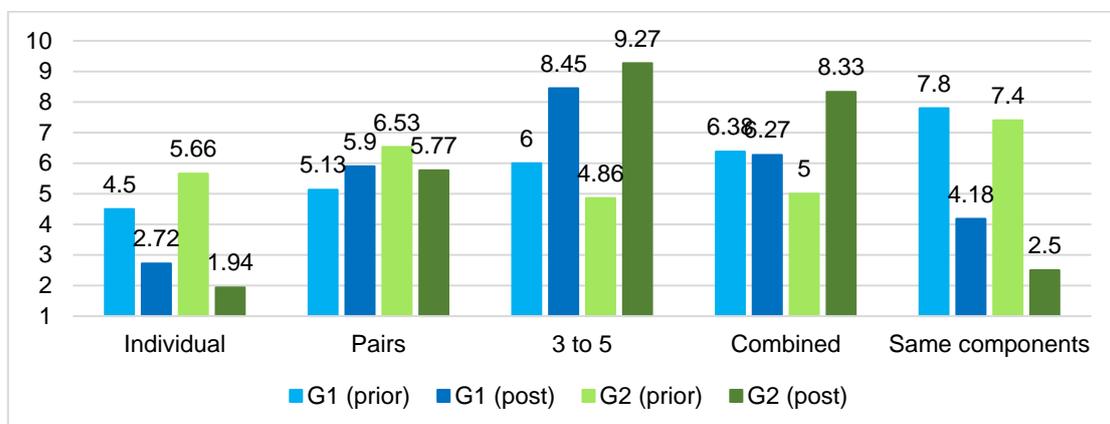
4.3.2.3. Group dynamics

During the gamified sessions, almost all the activities required students to work with some of the classmates, either in pairs or in groups of 3 to 5 people. Moreover, one of the intentions was to change the trend of their previous regular classes where, when groups were made, the components tended to be the same over and over. To do so, two virtual classrooms were created in *ClassDojo*

(<https://www.classdojo.com/>), and this application's function to create randomised groups of specific sizes was used, with the necessary amends being done afterwards so as to obtain groups where students' capabilities were as balanced as possible. Additionally, and with this same aim in mind, this function was configured in such a way that two of the students with special needs from G2 were never grouped together, and the same was done with two students from G1 who, when grouped together, tended to annoy one another, disrupting everyone.

To quantify students' views in these regards, they were asked to express their degree of agreement with five statements. Three of them referred to the types of groups that were most used in class: "when it has come to doing activities in class, they have been done above all (individually/in pairs/in groups of 3 to 5 people)." The fourth statement aimed at knowing whether they thought that all types of groups were used in a homogeneous way: "when it has come to doing activities in class, groups of different sizes have been frequently created and combined." The fifth statement aimed at seeing whether students perceived the fact that, in general, they were grouped with different people over and over: "when groups have been created in class, they have tended to be composed by the same people every time." Additionally, a sixth question was enabled to collect qualitative data with regards to whether students considered that not having been grouped with the same people was positive or negative. The results are illustrated in Figure 9, and will be analysed below.

Figure 9. Trends in group dynamics during the gamified sessions



The results reflect the efforts done in class, having a sharp drop in both G1 and G2 for individual work (from 4.5 to 2.72 in G1, and from 5.66 to 1.94 in G2). Pair work, on the other hand, slightly increased in G1 (from 5.13 to 5.9) and decreased in G2 (from 6.53 to 5.77). This is because, since G1 is only composed by 11 students, whereas in G2 there are 18 students, pair work was slightly used more frequently in G1 than in G2 because, when creating groups of 3 to 5 people, the resulting number of groups in G1 was often too low for the activities at hand. Nonetheless, this does not mean that groups of 3 to 5 people were not used at all in G1. As it can be seen in Figure 9, this type of group formation peaked for both G1 and G2, going from 6 to 8.45, and from 4.86 to 9.27 respectively. Nevertheless, while in G1 groups of this type were mostly made of 3 people, not only were they formed in G2 by 4 to 5 people, but also they were more widely used to obtain a fair number of groups which facilitated and allowed for a further management of the class. Regarding the statement where students were asked about their perception on how different types of groups had been consistently combined and used in class, the tendency is similar to that presented when analysing the use of different types of materials in class. On the one hand, students in G1 present a similar score (6.38 versus 6.27) in both *prior* and *post* surveys even though during the gamified sessions individual work decreased and work in groups of 3 to 5 people increased. On the other hand, in G2 the scores sharply increased (from 5 to 8.33) even though, as in G1, individual work sharply decreased and group work in groups of 3 to 5 people noticeably increased.

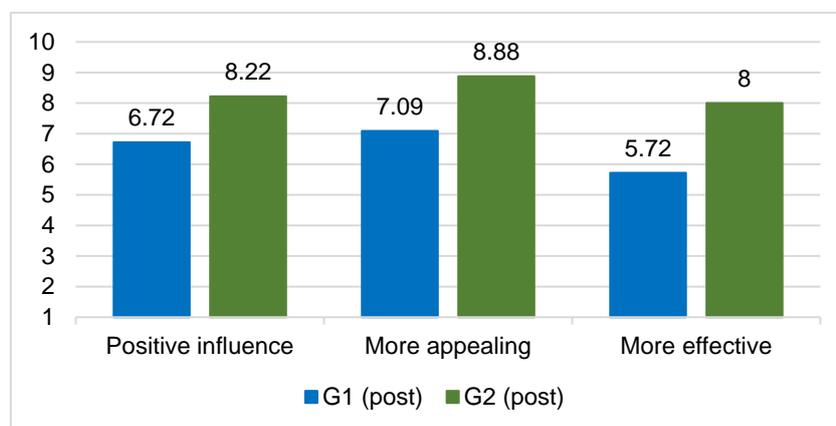
Finally, as expected, the results show how students perceived that, when working in groups, they no longer used to be paired with the same people every time. The results for G1 dropped from 7.8 to 4.18, whereas those results for G2 dropped even more significantly, from 7.4 to 2.5. Even if in both cases the tool used to randomise the components of every group was the same, the fact that in G1 students perceived that they were more often paired with the same people than in G2 can be again explained for the difference in size, with G1 having 11 students and G2 18. This, together with pair work having been used more frequently in G1 than in G2, means that students in G1 had, probability-wise, more chances to end up working with similar people. All things considered,

students' thoughts about having worked with much of the people in their classes point that its outcomes are positive, be it because it promoted learning (“la gente te puede ayudar y pienso que entre los compañeros se puede aprender más”), helped them know people they had not interacted with up to that point (“te ‘obligas’ a socializar con el resto de la clase y aprendes cosas nuevas de compañeros,” or “cambias de hábitos y haces lazos con otras personas”), or served them to broaden their views (“puedes ayudar o aprender de más gente y ver el punto de vista de diferentes personas”). Making sure that everyone had the opportunity to interact and work with every other person in a group contributed not only to create a better learning environment, but also to promote a socially healthy classroom environment. Additionally, it was useful to detect minor conflicts among some people, providing the teacher with the chance to tackle them before they possibly turned into greater conflicts.

4.3.2.4. *Classcraft*

In this section, students had to indicate their degree of agreement, with 1 being complete disagreement and 10 complete agreement, regarding three statements: “I think that the implementation of *Classcraft* in class has had a positive influence on my experience with the subject,” “I think that *Classcraft* is a more appealing platform than others whose utility is similar, such as Google Classroom or Moodle,” and “I think that *Classcraft* is a more effective platform than others whose utility is similar” Additionally, an open-ended question was added for students to express what they liked and disliked the most about *Classcraft*.

Figure 10. *Students' views on Classcraft*



As seen in Figure 10 above, the results are consistent with the pattern advanced all throughout the analysis, with G1 generally scoring lower than G2, and therefore seemingly being less engaged and motivated by the implementation of gamification in their sessions than those students in G2. Thus, as can be seen in Figure 10, when asked whether *Classcraft* influenced their experience with the subject positively, G1 obtained a value of 6.72 points, whereas G2 obtained a much higher score, that is, 8.22. In fact, to the question relating to what they liked and disliked about *Classcraft*, which was optional to answer, only 6 answers out of 11 participants were received from G1, whereas 17 of the 18 participants from G2 added comments in this item. One of the responses from G1 says: “[e]s una manera diferente de hacer clase, pero me ha cansado un poco,” confirming what has been suggested hitherto, that is, that indeed for many students in G1, having a gamified experience has not had a significant positive impact; quite the opposite, since most of the results tend to score negatively as compared to those obtained from the *prior* survey. The rest of the responses deem *Classcraft* in positive terms, and highlight among its strengths the possibility to create their own character, the reward system, the originality that being able to use in-game spells that had real outcomes in class implies, the quest system as a means to do homework, and the boss fights done in class. On the other hand, most of the negative remarks refer to the fact that a stable Internet connection was required to use it, with the issue being that there was no Wi-Fi connection available for students, making them use their own Internet connection: “[q]ue gasta megas lo que me ha gustado menos.”

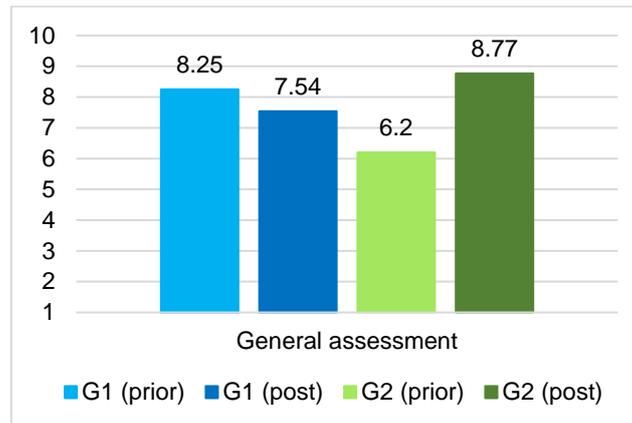
When asked whether they think *Classcraft* is more appealing than other platforms with similar ends, most students in both groups thought this to be the case, with G1 scoring 7.09 points and G2 scoring even higher, with 8.88 out of 10 points. On the other hand, regarding its effectiveness as compared to other platforms, those students in G1 seem to differ once again from those students in G2, with the former scoring 5.72 points and the latter 8.

4.4. Students' Satisfaction with the Subject

The last section found in both the *prior* and *post* questionnaires asked students for their general evaluation of the subject. For this, they had to choose a value

ranging from 1 to 10, with 1 being “very little satisfied” and 10 being “completely satisfied” regarding the statement “in general, I am satisfied with the subject.” The results are illustrated in Figure 11 below.

Figure 11. *Students’ general satisfaction with the subject*



According to the results, overall, students in both groups ended up being satisfied with the classes done during the experiment. The score from G1 is slightly lower for their experience during the experiment than the score obtained regarding their regular classes (7.54 versus 8.25). This was partly unexpected, given the negative trend that this group had established all throughout the analysis. Regarding G2, and not surprisingly, the score that these students gave to their experience during the gamified sessions peaked once again as compared to the one given to their regular classes in the *prior* survey (8.77 versus 6.2). From this, it can be confirmed that, in general, students enjoyed the gamified experience, indicating that gamification is a successful means to increase students’ motivation and engagement with the subject while being as educational, or even more, than other methodologies. In fact, it succeeds over traditional approaches to education. However, in the end, gamification is not the ultimate solution to all the problems found in classrooms, with a more balanced approach seemingly being more beneficial for students as suggested by the results from G1.

5. Further Proposals

Since I am aware that this study presents some limitations, in this section such limitations as well as some suggestions so as to avoid them when carrying out a similar study will be discussed. Additionally, one of the activities that could not be applied during the gamified sessions due to time constraints will be presented, since it can actually be applied in any class aimed at teaching a language, particularly at teaching vocabulary and expressions to those students at initial and intermediate levels.

5.1. Limitations and Suggestions

The main limitations that this study presents relate to its duration, the size of the sample, and the context where the experiment was carried out. Eventually, if all these limitations were surpassed, it would result in extensive data which would allow for a more precise approximation to the effects that can result from applying gamification in secondary school contexts.

5.1.1. *Duration*

This experiment extended over 9 sessions per group, which lasted 50 minutes each, and covered one didactic unit in both cases. It is clear that this duration is too short to draw accurate conclusions. Thus, ideally, an experiment of this nature should last from several months to one or more academic years. This would result in extensive and regular collection of data through several media, simultaneously allowing for a critical and constant evaluation of the effectiveness of the gamified system. All this would ultimately enable the designer to make the necessary changes according to the users' expressed needs as the experiment is run, maintaining or increasing the engagement with and effectiveness of the gamified system. Additionally, extending the duration of the experiment would provide more chances to expose its users to a wider and more thoroughly-thought variety of games and activities, further catering for users' specific requirements.

5.1.2. *Sample's Size*

Despite having been sufficient for the purposes of this study, the number of students who were exposed to gamification was relatively small. Thus, if possible,

more than 29 students should be involved in future studies that feature gamification in education. In fact, another issue at stake is the inequality in the number of students from each of the groups, considering that one group was made of 11 students and the other one of 18. Therefore, not only should future experiments involve several groups, but also the number of students in each group should be considered when it comes to comparing the results obtained from each group, with the number being as balanced as possible. Finally, and depending on the goal of the experiment, it is also advisable to involve more than one group from the same academic level to avoid biased results to the greatest of the extents.

5.1.3. Context of the Experiment

It is necessary to consider the fact that this experiment was run in a charter school. It is widely known that, at least in Spain, and for the time being, overall, the type of families whose children attend this kind of educational centres is not representative to the general trends found among the population of the country; therefore, in order to obtain a more realistic picture, experiments like this should be run in state schools as well. This way not only will the needs of the general public be reflected and therefore taken into consideration, but also the results will be both more accurate and widely applicable, adding an extra value and utility to such studies.

5.2. Applying Complete Games to Education: *Drawful 2*

Created by Jackbox Games, *Drawful 2*⁵ is one of the many complete games that, with a little bit of imagination, can be applied to educational contexts. This game requires a minimum of 3 players and accepts up to 8 players. Thus, in most cases, pairs or groups of 3 will have to be created. Each match has two rounds, and the total duration of each match may vary according to the number of players, and students' speed to draw and introduce their prompts.

To apply this game to educational contexts, the first step is to create a custom game, where the teacher will introduce the target vocabulary. To do so,

⁵ More information can be found in the following link: <https://jackboxgames.com/project/drawful2/>.

the option “make your own” (see Appendix A) will have to be selected. Then, via a browser, such as *Internet Explorer*, *Google Chrome*, or *Firefox*, the webpage jackbox.tv must be accessed. There, the room code given by the program, together with a username must be introduced. This will provide access to a new screen, where the name for this match will have to be introduced and, afterwards, all the target vocabulary can be inserted into the program (see Appendix B). Among all the vocabulary introduced, the program will randomly select the vocabulary from this list later when playing the game. Once all the target vocabulary has been introduced, we can proceed to the next screen, moment when the custom game will be automatically saved into the cloud for future uses. In case another educator who owns the game wanted to use our match, they can do so by using the code that the program provides to the creator of such match when they choose to publish it.

Once a custom game has been created, it can be accessed in class. However, before selecting it, it is desirable to check the game’s options (see Appendix C), such as the “extended timers” to provide students with more time to think, the “family friendly” filter in case we use matches provided by the machine, or the “censoring” mode to add the option to kick out those players who break the rules or misbehave. Through this same option the teacher can censor those drawings or prompts that they regard as inappropriate. Additionally, regarding this last option, it is important to consider that it will be the first player to access the game who will have the control of the censoring filter. Thus, it gives educators two options: either the teacher participates in the game by being player 1, or they give out the room code first to a student who is responsible enough to only censor those players or answers that they are told to.

To play the game, students will have to open the website jackbox.tv using their phone’s browser. In this website, they will be asked to introduce the 4-digit room code provided by the program, which should be projected to the class, and a username (see Appendix D). After students have introduced this information, they will be redirected to a new page where they will have to draw their avatar (see Appendix E). Once all players have drawn their avatars, they will appear on the general screen (see Appendix F). Player 1 will be considered by the program

as a “VIP,” and will have the responsibility to initiate the game by tapping on “everybody’s in.”

Once the game has begun, a prompt will be sent to every phone, with students having to draw something that represents what is said by such prompt. The time that they have is indicated in the projected screen by a group of pencils that advance through the screen with worm-like movements. Students should send their drawings before the time is up. In case they need extra time, the ESC key can be pressed to pause the game anytime (see Appendix G). The drawings will be mixed up, and in every turn one drawing will be randomly selected by the program and presented to the rest of the class (see Appendix H), who will have to introduce in their phones a prompt indicating what they think the drawing represents. After every player has inserted a prompt, all prompts, including the one received by the player who originally painted such drawing, will be displayed together with the drawing at stake (see Appendix I). It is in this moment when, except for the one who has drawn the picture that is being displayed, each student will have to vote for the prompt that they think was the one originally received by the player who did the drawing. Thus, if they vote for the original prompt, the player who did the drawing will receive 1,000 points per vote, whereas if they choose a prompt that was created by other players to mislead them, the player who introduced that prompt will receive 500 points per vote. After each round, points are assigned accordingly, with the players’ avatars being ordered in a ranking (see Appendix J). At the end of the game, the player with the most points will be celebrated as the winner (see Appendix K), and so will be the player who has received the most likes (see Appendix L), which are extra points that all players can give to others when they consider a prompt original, creative, fun, etc.

6. Conclusion

Gamification is a relatively new research field that has been applied in a multitude of contexts. In the case of education, it implies a radical methodological change that breaks with traditional methodologies of the past whose effectiveness has been widely compromised in the last few decades, with more and more students having problems to engage with the contents and tasks at hand in their regular

classes. Gamification poses a solution to many of the endemic problems that many educational institutions worldwide are facing. This does not mean, however, that gamification is the ultimate solution to all these problems. In fact, as seen in the literature review, many studies have obtained mixed results when applying gamification in educational contexts, pointing out that for a gamified system to succeed, innumerable factors need to be mapped during the design process. This, together with carrying out constant analyses of users' attitudes and behaviours in and towards the system in order to make the necessary updates and changes, will pave the way for a successful application of gamification. Additionally, other methodologies and teaching techniques should be considered and embedded into the system to make it as balanced as possible and eventually appeal to and cater for a wider audience.

This dissertation has focused on the use of gamification in undergraduate educational contexts; more specifically, on its use in two groups of students at different academic levels in a charter secondary school located in Palma de Mallorca, Spain. For this, the use of both *Classcraft* and a student-centred approach were at the crux of the experiment, which aimed at exploring whether students' motivation and engagement with the subject of EFL were affected positively, as well as at examining the extent to which the impact of such methodological approach differed in both groups. Qualitative and quantitative data were gathered through several means, but mainly through two surveys, which were provided prior to and after the experiment.

The analysis of such data suggests that, overall, the impact of gamification on both groups was positive. Nonetheless, on the one hand, its impact on the group of younger students, whose regular teacher used a balanced approach to teaching, was negative compared to the results obtained in the questionnaire prior to the experiment. This does not mean, however, that the results themselves were negative, with gamification hardly obtaining scores that demonstrated users' disengagement and demotivation. On the other hand, regarding the group of more mature students, whose regular teacher prominently made use of a traditional approach, the impact of gamification was significantly positive as compared to those results gathered from the *prior* survey. Thus, the degree of

success that the application of gamification may have in a group of students seems to be subject to their previous yet recent exposure to other methodologies, rather than to the students' age.

Finally, bearing in mind the fact that this study presents certain limitations, some suggestions to be considered in future similar experiments have been provided. Along with this, an example of a gamified activity based on the use of *Drawful 2*, a complete video game, has been presented.

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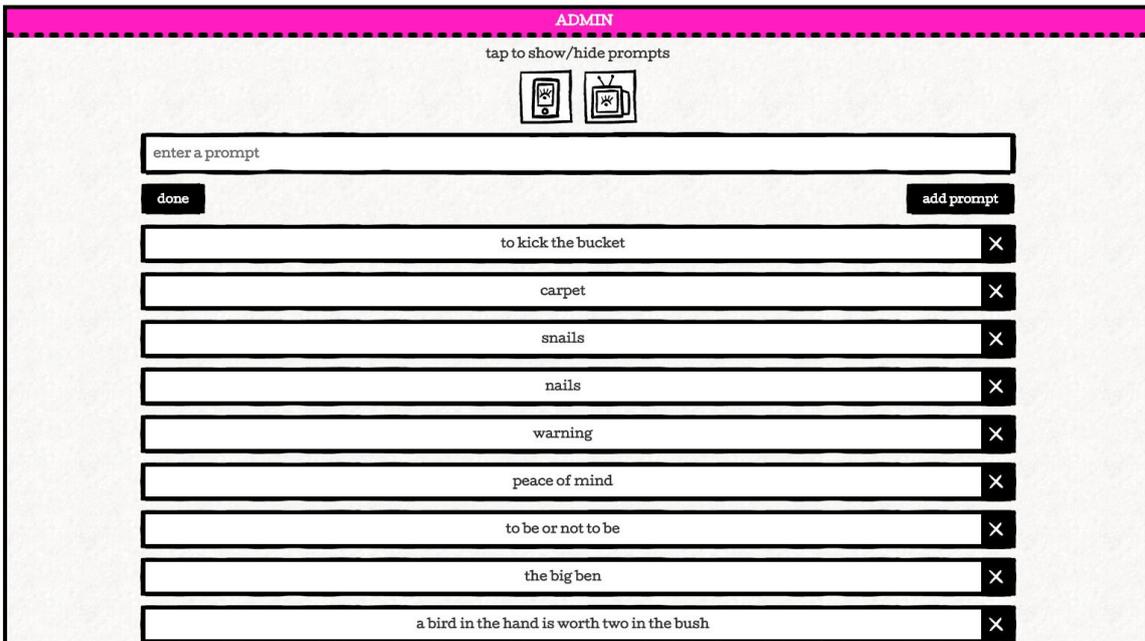
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Appendices

Appendix A: Main Screen



Appendix B: Creating a Custom Game



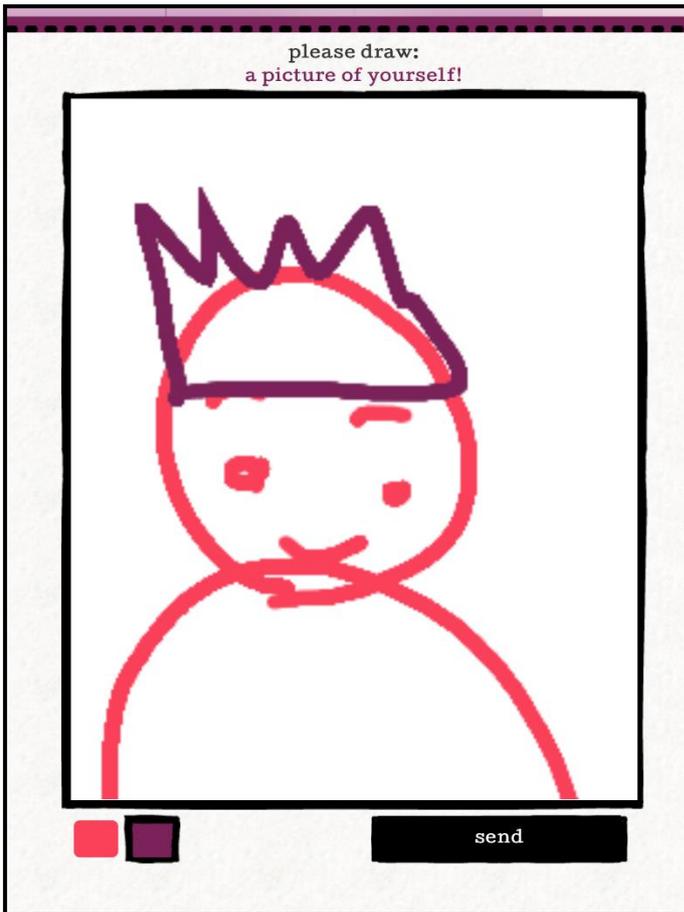
Appendix C: Additional In-Game Options



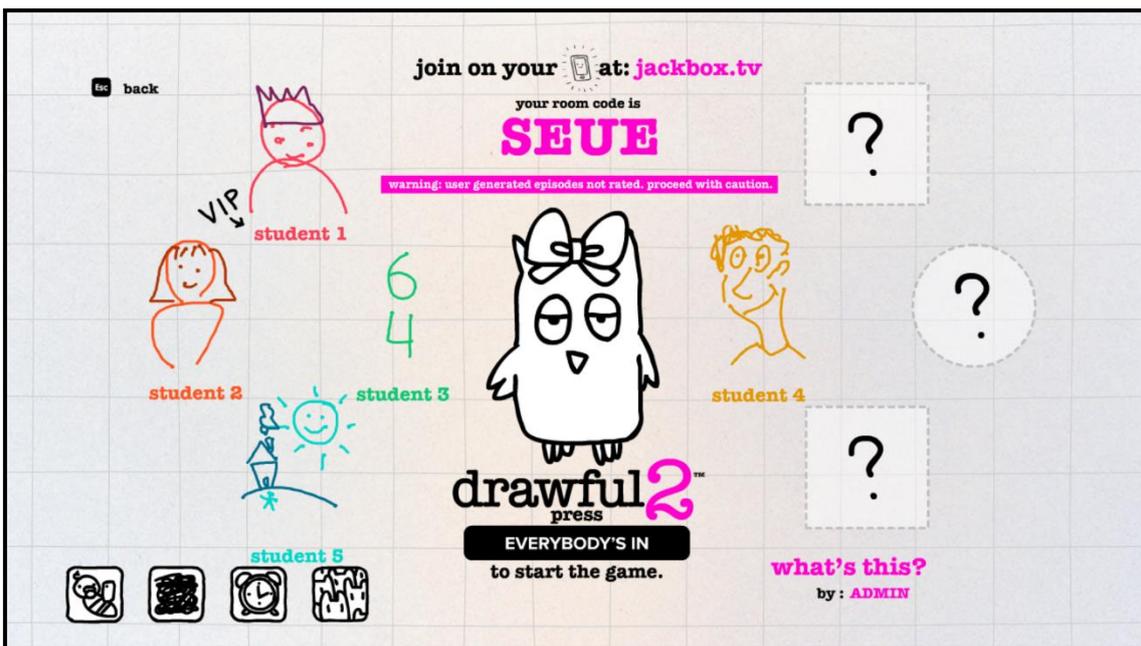
Appendix D: Students' Access Screen



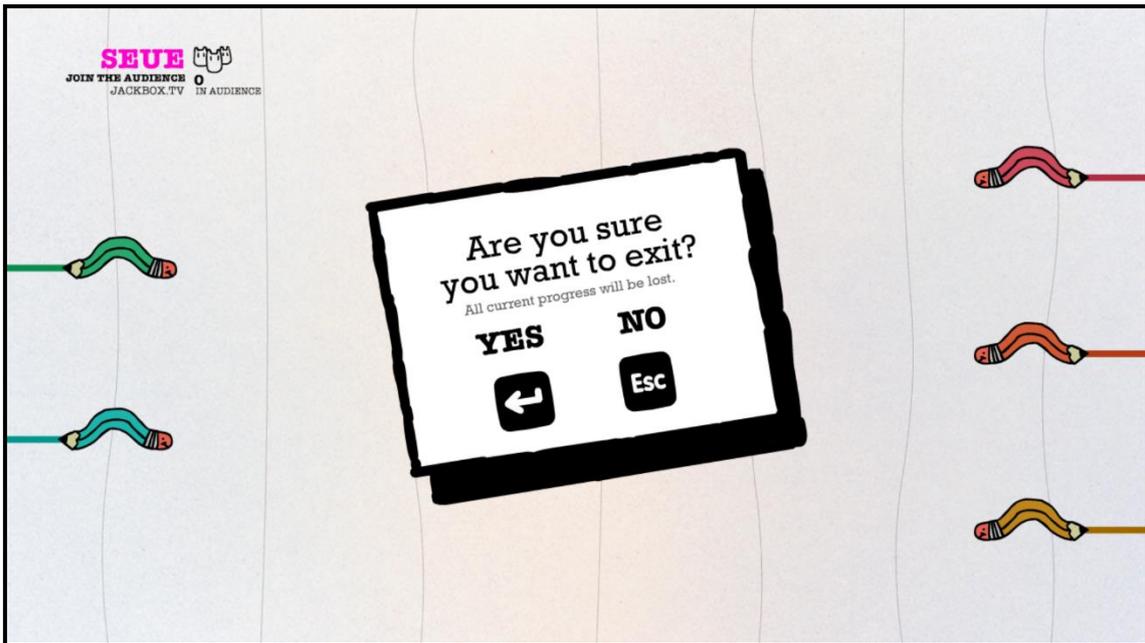
Appendix E: Avatar Drawing Screen



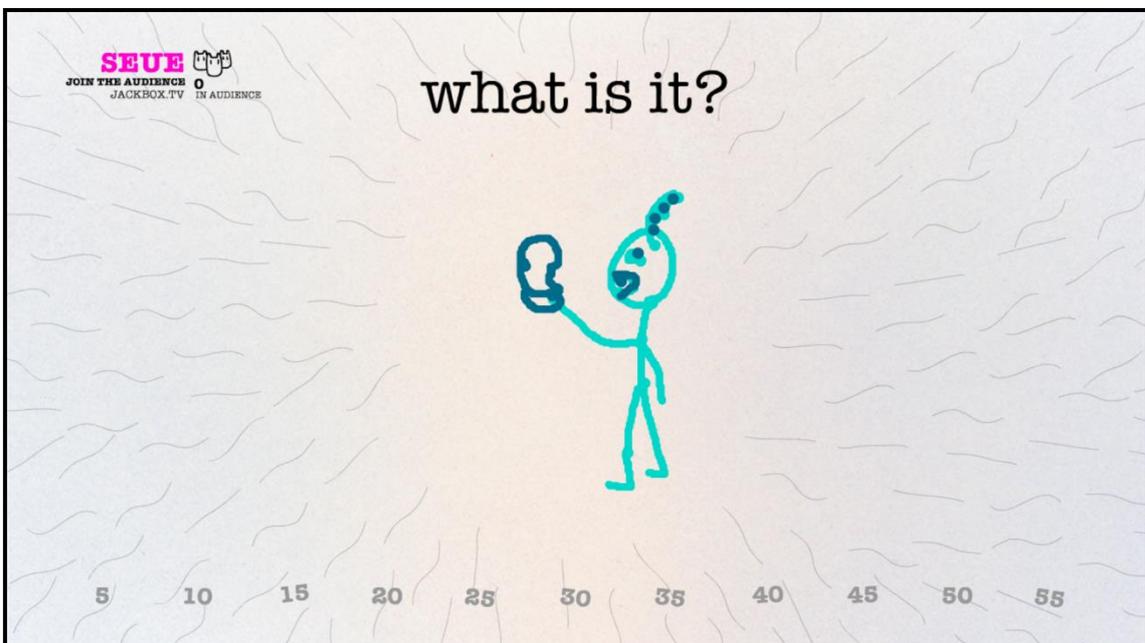
Appendix F: Screen Prior to the Start of the Match



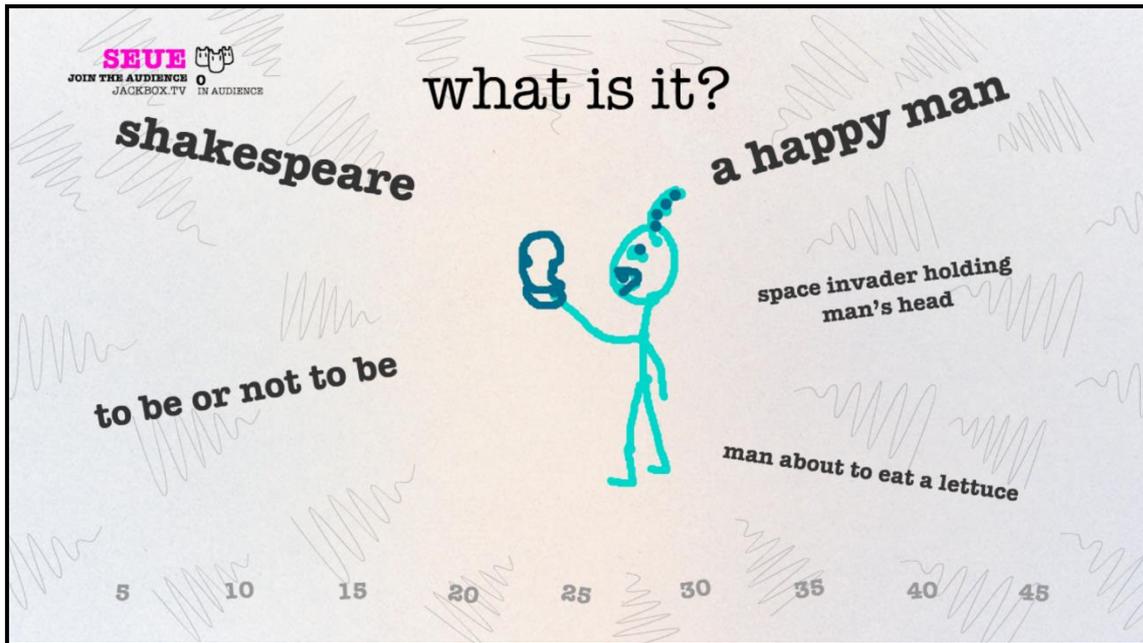
Appendix G: Pausing the Game



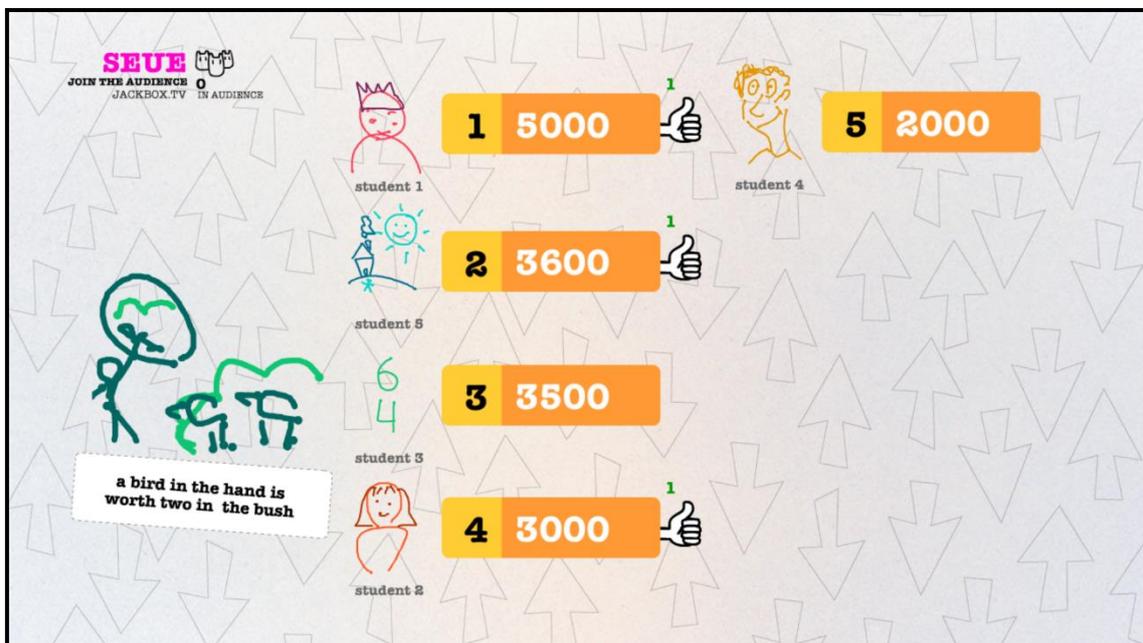
Appendix H: Randomly Selected Drawing



Appendix I: Original and Students' Prompts Displayed



Appendix J: Ranking



Appendix K: Celebrating the Winner



Appendix L: Celebrating the Most Liked Player

